

=> d his ful

(FILE 'HOME' ENTERED AT 16:49:44 ON 23 FEB 2006)

FILE 'HCAPLUS' ENTERED AT 16:52:44 ON 23 FEB 2006

L1 2210 SEA ABB=ON ?AUTOCLAVE?(4A)?STIR?  
L2 235 SEA ABB=ON L1 AND ?REACTOR?  
L3 0 SEA ABB=ON L2 AND ?PHENOL?(4A)?EXTRACT?  
L4 3 SEA ABB=ON L2 AND ?HYDROTHERM?  
L5 3 SEA ABB=ON L4 AND (PRD<20040316 OR PD<20040316)  
L6 1 SEA ABB=ON L5 AND ?PLANT? *1 cit from CA Plus*

FILE 'AGRICOLA, BIOSIS, CABA, CROPB, CROPU, ESBIODBASE, GENBANK, IFIPAT, NTIS, SCISEARCH, MEDLINE, JICST-EPLUS, JAPIO' ENTERED AT 16:55:31 ON 23 FEB 2006

L7 2 SEA ABB=ON L5  
L8 2 DUP REMOV L7 (0 DUPLICATES REMOVED) *2 cit's from above db's*

FILE 'USPATFULL' ENTERED AT 17:01:46 ON 23 FEB 2006

L9 407 SEA ABB=ON L4 AND (PRD<20040316 OR PD<20040316)  
L10 1 SEA ABB=ON L9 AND ?OLIVE?(W)OIL?  
L11 1 SEA ABB=ON L9 AND ?TYROSOL? *1 cit from USPatfull*

FILE HOME

FILE HCAPLUS

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FILE COVERS 1907 - 23 Feb 2006 VOL 144 ISS 9

FILE LAST UPDATED: 22 Feb 2006 (20060222/ED)

New CAS Information Use Policies, enter HELP USAGETERMS for details.

This file contains CAS Registry Numbers for easy and accurate substance identification.

FILE AGRICOLA

FILE COVERS 1970 TO 7 Feb 2006 (20060207/ED)

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This file contains CAS Registry Numbers for easy and accurate substance identification.

FILE BIOSIS

FILE COVERS 1969 TO DATE.

CAS REGISTRY NUMBERS AND CHEMICAL NAMES (CNs) PRESENT  
FROM JANUARY 1969 TO DATE.

RECORDS LAST ADDED: 22 February 2006 (20060222/ED)

FILE CABA  
FILE COVERS 1973 TO 3 Feb 2006 (20060203/ED)

This file contains CAS Registry Numbers for easy and accurate  
substance identification.

The CABA file was reloaded 7 December 2003. Enter HELP RLOAD for details.

FILE CROPB  
FILE LAST LOADED: 11 NOV 94 <941111/UP>  
>>> EFFECTIVE JAN 1, 2004, THE 70% DISCOUNT FOR  
DERWENT CROP PROTECTION SUBSCRIBERS WILL BE NO  
LONGER VALID <<<

FILE CROPU  
FILE LAST UPDATED: 5 JAN 2004 <20040105/UP>  
FILE COVERS 1985 TO 2003

>>> CROPU WILL NO LONGER BE UPDATED AS OF 2004 <<<

>>> EFFECTIVE JAN 1, 2004, THE 70% DISCOUNT FOR  
DERWENT CROP PROTECTION SUBSCRIBERS WILL BE NO  
LONGER VALID <<<

FILE ESBIODASE  
FILE LAST UPDATED: 21 FEB 2006 <20060221/UP>  
FILE COVERS 1994 TO DATE.

>>> SIMULTANEOUS LEFT AND RIGHT TRUNCATION AVAILABLE IN  
/CC, /ORGN, AND /ST <<<

FILE GENBANK

GENBANK (R) IS A REGISTERED TRADEMARK OF THE U.S. DEPARTMENT  
OF HEALTH AND HUMAN SERVICES.

This file contains CAS Registry Numbers for easy and accurate  
substance identification.

FILE IFIPAT  
FILE COVERS 1950 TO PATENT PUBLICATION DATE: 21 Feb 2006 (20060221/PD)  
FILE LAST UPDATED: 22 Feb 2006 (20060222/ED)  
HIGHEST GRANTED PATENT NUMBER: US7003800  
HIGHEST APPLICATION PUBLICATION NUMBER: US2006037120  
UNITERM INDEXING IS AVAILABLE IN THE IFIUDB FILE  
UNITERM INDEXING LAST UPDATED: 9 Feb 2006 (20060209/UP)  
INDEXING CURRENT THROUGH PAT PUB DATE: 29 Nov 2005 (20051129/PD)

IFIPAT reloaded on 9/22/05. Enter HELP RLOAD for details.

FILE NTIS  
FILE LAST UPDATED: 17 FEB 2006 <20060217/UP>  
FILE COVERS 1964 TO DATE.

<<< SIMULTANEOUS LEFT AND RIGHT TRUNCATION AVAILABLE IN  
THE BASIC INDEX (/BI) >>>

FILE SCISEARCH

FILE COVERS 1974 TO 16 Feb 2006 (20060216/ED)

SCISEARCH has been reloaded, see HELP RLOAD for details.

FILE MEDLINE

FILE LAST UPDATED: 22 FEB 2006 (20060222/UP). FILE COVERS 1950 TO DATE.

On December 11, 2005, the 2006 MeSH terms were loaded.

The MEDLINE reload for 2006 will soon be available. For details  
on the 2005 reload, enter HELP RLOAD at an arrow prompt (=>).  
See also:

<http://www.nlm.nih.gov/mesh/>  
[http://www.nlm.nih.gov/pubs/techbull/nd04/nd04\\_mesh.html](http://www.nlm.nih.gov/pubs/techbull/nd04/nd04_mesh.html)  
[http://www.nlm.nih.gov/pubs/techbull/nd05/nd05\\_med\\_data\\_changes.html](http://www.nlm.nih.gov/pubs/techbull/nd05/nd05_med_data_changes.html)  
[http://www.nlm.nih.gov/pubs/techbull/nd05/nd05\\_2006\\_MeSH.html](http://www.nlm.nih.gov/pubs/techbull/nd05/nd05_2006_MeSH.html)

OLDMEDLINE is covered back to 1950.

MEDLINE thesauri in the /CN, /CT, and /MN fields incorporate the  
MeSH 2006 vocabulary.

This file contains CAS Registry Numbers for easy and accurate

FILE JICST-EPLUS

FILE COVERS 1985 TO 20 FEB 2006 (20060220/ED)

THE JICST-EPLUS FILE HAS BEEN RELOADED TO REFLECT THE 1999 CONTROLLED  
TERM (/CT) THESAURUS RELOAD.

FILE JAPIO

FILE COVERS APR 1973 TO OCTOBER 27, 2005

>>> GRAPHIC IMAGES AVAILABLE <<<

>>> NEW IPC8 DATA AND FUNCTIONALITY NOT YET AVAILABLE IN THIS FILE.  
USE IPC7 FORMAT FOR SEARCHING THE IPC. WATCH THIS SPACE FOR FURTHER  
DEVELOPMENTS AND SEE OUR NEWS SECTION FOR FURTHER INFORMATION  
ABOUT THE IPC REFORM <<<

FILE USPATFULL

FILE COVERS 1971 TO PATENT PUBLICATION DATE: 21 Feb 2006 (20060221/PD)

FILE LAST UPDATED: 21 Feb 2006 (20060221/ED)

HIGHEST GRANTED PATENT NUMBER: US7003800

HIGHEST APPLICATION PUBLICATION NUMBER: US2006037120

CA INDEXING IS CURRENT THROUGH 21 Feb 2006 (20060221/UPCA)

ISSUE CLASS FIELDS (/INCL) CURRENT THROUGH: 21 Feb 2006 (20060221/PD)

REVISED CLASS FIELDS (/NCL) LAST RELOADED: Dec 2005

USPTO MANUAL OF CLASSIFICATIONS THESAURUS ISSUE DATE: Dec 2005

=&gt; d que stat 15 1-3

~~'1-3' IS NOT VALID HERE~~~~For an explanation, enter "HELP DISPLAY QUERY".~~

=&gt; d que stat 15

L1 2210 SEA FILE=HCAPLUS ABB=ON ?AUTOCLAVE?(4A)?STIR?  
 L2 235 SEA FILE=HCAPLUS ABB=ON L1 AND ?REACTOR?  
 L4 3 SEA FILE=HCAPLUS ABB=ON L2 AND ?HYDROTHERM?  
 L5 3 SEA FILE=HCAPLUS ABB=ON L4 AND (PRD<20040316 OR PD<20040316)

=&gt; d ibib abs 15 1-3

L5 ANSWER 1 OF 3 HCAPLUS COPYRIGHT 2006 ACS on STN  
 ACCESSION NUMBER: 2004:80555 HCAPLUS  
 DOCUMENT NUMBER: 140:130123  
 TITLE: Recovery of phenolic compounds from a residual plant material by using a **hydrothermal** process  
 INVENTOR(S): Ballesteros Perdices, Mercedes; Negro Alvarez, Maria Jose; Manzanares Secades, Paloma; Ballesteros Perdices, Ignacio; Oliva Dominguez, Jose Miguel  
 PATENT ASSIGNEE(S): Centro De Investigaciones Energeticas, Medioambientales Y Tecnologicas (C.I.E.M.A.T.), Spain  
 SOURCE: PCT Int. Appl., 18 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Spanish  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004009206	A1	20040129	WO 2003-ES85	20030220 <--
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW			
RW:	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			
ES 2199069	A1	20040201	ES 2002-1671	20020717 <--
ES 2199069	B1	20050201		
AU 2003208731	A1	20040209	AU 2003-208731	20030220 <--
US 2004176647	A1	20040909	US 2004-801511	20040316 <--
PRIORITY APPLN. INFO.:			ES 2002-1671	A 20020717 <--
			WO 2003-ES85	W 20030220 <--

AB The method involves a **hydrothermal** processing of a residual plant material (especially waste from olive oil production) in a closed **reactor** (especially **stirred autoclave**). The process contains the following steps: (a) contacting of the raw material with hot water at a solid/liquid weight ratio of 1:(5-15) in the **reactor**, (b) stirring of the mixture, (c) heating to a temperature range of 180-240° and at such a pressure that the water remains in the liquid phase, (d) stirring for 4-30 min, and (e) cooling of the **reactor** to .apprx.40°, unloading of the mixture and recovery of the liquid fraction. Content of tyrosol and hydroxytyrosol is determined by using high-pressure liquid chromatog. The recovered phenolic compds. are suitable as antioxidants for food and pharmaceutical industries.

REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 2 OF 3 HCAPLUS COPYRIGHT 2006 ACS on STN  
ACCESSION NUMBER: 1999:754520 HCAPLUS  
DOCUMENT NUMBER: 132:131212  
TITLE: Synthesis of highly ordered boron-containing B-MCM-41 and pure silica MCM-41  
AUTHOR(S): Oberhagemann, U.; Jeschke, M.; Papp, H.  
CORPORATE SOURCE: Institut fur Technische Chemie, Universitat Leipzig, Leipzig, 04103, Germany  
SOURCE: Microporous and Mesoporous Materials (1999), 33(1-3), 165-172  
CODEN: MIMMFJ; ISSN: 1387-1811  
PUBLISHER: Elsevier Science B.V.  
DOCUMENT TYPE: Journal  
LANGUAGE: English

AB This study deals with the **hydrothermal** synthesis of highly ordered MCM-41 and B-MCM-41. Four techniques for the generation of MCM-41 were compared: thermal treatment in polypropylene vessels, in static **autoclaves**, in a **stirred autoclave** in ovens, and in microwave **reactors** heated with microwave radiation. The formation process of MCM-41 and the condensation of the framework were monitored by x-ray diffraction. The high periodicity of the materials was detected with x-ray powder diffraction and TEM. Highly ordered samples showing reflections up to 6th order in the selected area electron diffraction were produced.

REFERENCE COUNT: 23 THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 3 OF 3 HCAPLUS COPYRIGHT 2006 ACS on STN  
ACCESSION NUMBER: 1973:32127 HCAPLUS  
DOCUMENT NUMBER: 78:32127  
TITLE: Clay mineral synthesis. III. Rapid **hydrothermal** crystallization of an aluminian smectite  
AUTHOR(S): Granquist, W. T.; Hoffman, G. W.; Boteler, R. C.  
CORPORATE SOURCE: Baroid Div., N.L. Ind., Inc., Houston, TX, USA  
SOURCE: Clays and Clay Minerals, Proceedings of the Conference (1972), 20(5), 323-9  
CODEN: CCMPA7; ISSN: 0578-4735  
DOCUMENT TYPE: Journal  
LANGUAGE: English

AB An aluminian smectite with about one Al<sup>3+</sup>/Si<sup>4+</sup> replacement/unit cell was batch-synthesized on a large scale (100-gal autoclave) at 300° and 1240 psig with reaction times of several hr rather than days. This rapid crystallization was related to the use of NH<sub>4</sub><sup>+</sup> as a charge-balancing cation and to partial F/OH substitution. A short synthesis time prompted a study of continuous crystallization. Either of 2 techniques, flow through a **stirred autoclave** and through a multistaged **reactor** column, produced a crystalline product; neither gave the crystallinity of the batch process.

=> d que stat 18

L1 2210 SEA FILE=HCAPLUS ABB=ON ?AUTOCLAVE?(4A)?STIR?  
 L2 235 SEA FILE=HCAPLUS ABB=ON L1 AND ?REACTOR? .  
 L4 3 SEA FILE=HCAPLUS ABB=ON L2 AND ?HYDROTHERM?  
 L5 3 SEA FILE=HCAPLUS ABB=ON L4 AND (PRD<20040316 OR PD<20040316)  
 L7 2 SEA L5  
 L8 2 DUP REMOV L7 (0 DUPLICATES REMOVED)

=> d ibib abs 18 1-2

L8 ANSWER 1 OF 2 IFIPAT COPYRIGHT 2006 IFI on STN  
 AN 10669409 IFIPAT;IFIUDB;IFICDB  
 TITLE: PROCESS TO EXTRACT PHENOLIC COMPOUNDS FROM A RESIDUAL  
 PLANT MATERIAL USING A **HYDROTHERMAL**  
 TREATMENT  
 INVENTOR(S): Alvarez; Maria Jose Negro, Madrid, ES  
 Dominguez; Jose Miguel Oliva, Madrid, ES  
 Perdices; Ignacio Ballesteros, Madrid, ES  
 Perdices; Mercedes Ballesteros, Madrid, ES  
 Secades; Paloma Manzanares, Madrid, ES  
 PATENT ASSIGNEE(S): Centro de Investigaciones Energeticas, Madrid, ES  
 AGENT: John C. McMahon, PO Box 30069, Kansas City, MO,  
 64112, US

	NUMBER	PK	DATE
PATENT INFORMATION:	US 2004176647	A1	20040909
APPLICATION INFORMATION:	US 2004-801511		20040316

	NUMBER	DATE
PRIORITY APPLN. INFO.:	ES 2002-1671	20020717
FAMILY INFORMATION:	US 2004176647	20040909
DOCUMENT TYPE:	Utility	
	Patent Application - First Publication	
FILE SEGMENT:	CHEMICAL	
	APPLICATION	

NUMBER OF CLAIMS: 5 1 Figure(s).  
 DESCRIPTION OF FIGURES:

FIG. 1 shows a schematic diagram of the **autoclave**-type  
 \*\*\*reactor\*\*\*, with **stirring**, which has been used in the embodiment  
 of the process object of the present invention.

AB The **hydrothermal** treatment is based on placing the crude  
 residual plant material in contact with hot water in a closed  
**reactor**, comprising the following steps: a) placing the material  
 to be treated in contact with water in a closed **reactor**, and  
 adjusting the solid/liquid ratio so that it ranges from 1/5 to 1/15  
 (w/v): b) stirring; c) heating to a temperature between 180 and 240  
 degrees C., and at a pressure so that the water is maintained in liquid  
 phase; d) constantly stirring the mixture for a time period between 4 and  
 30 minutes; and e) cooling the **reactor** to approximately 40  
 degrees C., unloading the mixture, filtering and recovering the liquid  
 fraction.

CLMN 5 1 Figure(s).

FIG. 1 shows a schematic diagram of the **autoclave**-type  
**reactor**, with **stirring**, which has been used in the  
 embodiment of the process object of the present invention.

L8 ANSWER 2 OF 2 SCISEARCH COPYRIGHT (c) 2006 The Thomson Corporation on

STN

ACCESSION NUMBER: 1999:933930 SCISEARCH  
THE GENUINE ARTICLE: 260PM  
TITLE: Synthesis of highly ordered boron-containing B-MCM-41 and  
pure silica MCM-41  
AUTHOR: Oberhagemann U (Reprint); Jeschke M; Papp H  
CORPORATE SOURCE: Univ Leipzig, Inst Tech Chem, D-04103 Leipzig, Germany  
(Reprint)  
COUNTRY OF AUTHOR: Germany  
SOURCE: MICROPOROUS AND MESOPOROUS MATERIALS, (15 DEC 1999  
) Vol. 33, No. 1-3, pp. 165-172.  
ISSN: 1387-1811.  
PUBLISHER: ELSEVIER SCIENCE BV, PO BOX 211, 1000 AE AMSTERDAM,  
NETHERLANDS.  
DOCUMENT TYPE: Article; Journal  
LANGUAGE: English  
REFERENCE COUNT: 23  
ENTRY DATE: Entered STN: 1999  
Last Updated on STN: 1999

\*ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS\*

AB This study deals with the **hydrothermal** synthesis of highly ordered MCM-41 and B-MCM-41. Four techniques for the generation of MCM-41 were compared: thermal treatment in polypropylene vessels, in static **autoclaves**, in a **stirred autoclave** in ovens, and in microwave **reactors** heated with microwave radiation. The formation process of MCM-41 and the condensation of the framework were monitored by X-ray diffraction. The high periodicity of the materials was detected with X-ray powder diffraction and transmission electron microscopy. Highly ordered samples showing reflections up to sixth order in the selected area electron diffraction were produced. (C) 1999 Elsevier Science B.V. All rights reserved.

=> d que stat l11

L1 2210 SEA FILE=HCAPLUS ABB=ON ?AUTOCLAVE?(4A)?STIR?  
 L2 235 SEA FILE=HCAPLUS ABB=ON L1 AND ?REACTOR?  
 L4 3 SEA FILE=HCAPLUS ABB=ON L2 AND ?HYDROTHERM?  
 L9 407 SEA FILE=USPATFULL ABB=ON L4 AND (PRD<20040316 OR PD<20040316)  
 L11 1 SEA FILE=USPATFULL ABB=ON L9 AND ?TYROSOL?

=> d ibib abs l11 1-1

L11 ANSWER 1 OF 1 USPATFULL on STN

ACCESSION NUMBER: 2004:228261 USPATFULL

TITLE: Process to extract phenolic compounds from a residual plant material using a **hydrothermal** treatment

INVENTOR(S): Perdices, Mercedes Ballesteros, Madrid, SPAIN

Alvarez, Maria Jose Negro, Madrid, SPAIN

Secades, Paloma Manzanares, Madrid, SPAIN

Perdices, Ignacio Ballesteros, Madrid, SPAIN

Dominguez, Jose Miguel Oliva, Madrid, SPAIN

PATENT ASSIGNEE(S): Centro de Investigaciones Energeticas, Madrid, SPAIN  
 (non-U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2004176647	A1	20040909
APPLICATION INFO.:	US 2004-801511	A1	20040316 (10)

	NUMBER	DATE
PRIORITY INFORMATION:	ES 2002-1671	20020717
DOCUMENT TYPE:	Utility	
FILE SEGMENT:	APPLICATION	
LEGAL REPRESENTATIVE:	John C. McMahon, PO Box 30069, Kansas City, MO, 64112	
NUMBER OF CLAIMS:	5	
EXEMPLARY CLAIM:	1	
NUMBER OF DRAWINGS:	1 Drawing Page(s)	
LINE COUNT:	405	

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The **hydrothermal** treatment is based on placing the crude residual plant material in contact with hot water in a closed **reactor**, comprising the following steps:

a) placing the material to be treated in contact with water in a closed **reactor**, and adjusting the solid/liquid ratio so that it ranges from 1/5 to 1/15 (w/v):

b) stirring;

c) heating to a temperature between 180 and 240° C., and at a pressure so that the water is maintained in liquid phase;

d) constantly stirring the mixture for a time period between 4 and 30 minutes; and

e) cooling the **reactor** to approximately 40° C., unloading the mixture, filtering and recovering the liquid fraction.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.



=> d his ful

(FILE 'HOME' ENTERED AT 13:52:51 ON 23 FEB 2006)

FILE 'HCAPLUS' ENTERED AT 13:53:03 ON 23 FEB 2006

E PERDICES MERCEDES/AU  
L1 0 SEA ABB=ON "PERDICES MERCEDES"/AU  
E BALLESTEROS MERCEDES/AU  
L2 15 SEA ABB=ON "BALLESTEROS MERCEDES"/AU  
L3 15 SEA ABB=ON L1 OR L2  
E ALVAREZ MARIA JOSE NEGRO/AU  
L4 1 SEA ABB=ON "ALVAREZ MARIA J"/AU  
E SECADES PALOMA MANZANARES/AU  
L5 6 SEA ABB=ON "SECADES P"/AU  
E PERDICES IGNACIO B/AU  
L6 2 SEA ABB=ON "PERDICES M BALLESTEROS"/AU  
E BALLESTEROS PERDICES IGNACIO/AU  
L7 2 SEA ABB=ON "BALLESTEROS PERDICES IGNACIO"/AU  
E DOMINGUEZ JOSE/AU  
E DOMINGUEZ JOSE/AU  
L8 18 SEA ABB=ON "DOMINGUEZ JOSE M"/AU  
L9 0 SEA ABB=ON L3 AND L4 AND L5 AND L6 AND L7 AND L8  
L10 44 SEA ABB=ON L3 OR L4 OR L5 OR L6 OR L7 OR L8  
L11 3 SEA ABB=ON L10 AND ?HYDROTHERM?  
L12 ANALYZE L11 1-3 CT : 12 TERMS

FILE 'REGISTRY' ENTERED AT 14:13:43 ON 23 FEB 2006

E OLIVE OIL/CN  
L13 1 SEA ABB=ON "OLIVE OIL"/CN  
L14 17 SEA ABB=ON (TYROSOL OR HYDROXYTYROSOL)

FILE 'HCAPLUS' ENTERED AT 14:14:15 ON 23 FEB 2006

L15 896 SEA ABB=ON PHENOLS+ALL AND THERMAL DECOMPOSITION+ALL  
L16 4 SEA ABB=ON L15 AND (L13 OR ?OLIVE?(W)OIL?)  
L17 8 SEA ABB=ON L15 AND ?PLANT?(W) ?MATERIAL?  
L18 11 SEA ABB=ON L16 OR L17  
L19 1 SEA ABB=ON L18 AND ?AUTOCLAVE?  
L20 8 SEA ABB=ON L18 AND (L17 OR ?TYROSOL?)  
L21 11 SEA ABB=ON L18 OR L19 OR L20  
L22 10 SEA ABB=ON L21 AND (PRD<20040316 OR PD<20040316) 10 cit's from CAPLUS  
L23 0 SEA ABB=ON L22 AND (HPLC OR ?HIGH?(W) ?PERFORM?(W) ?LIQUID?(W) ?C  
HROMATOG?)

FILE 'AGRICOLA, BIOSIS, CABA, CROPB, CROPU, ESBIODBASE, GENBANK, IFIPAT,  
NTIS, SCISEARCH' ENTERED AT 14:17:05 ON 23 FEB 2006

L24 0 SEA ABB=ON L21

FILE 'MEDLINE, JAPIO, JICST-EPLUS' ENTERED AT 14:19:22 ON 23 FEB 2006

L25 0 SEA ABB=ON L21  
L26 45 SEA ABB=ON ?PHENOLS? AND ?THERMAL?(W) ?DECOMPOSITION?

FILE 'AGRICOLA, BIOSIS, CABA, CROPB, CROPU, ESBIODBASE, GENBANK, IFIPAT,  
NTIS, SCISEARCH, MEDLINE, JAPIO, JICST-EPLUS' ENTERED AT 14:22:08 ON 23  
FEB 2006

L27 228 SEA ABB=ON ?PHENOLS? AND ?THERMAL?(W) ?DECOMPOSITION?  
L28 199 DUP REMOV L27 (29 DUPLICATES REMOVED)  
L29 1 SEA ABB=ON L28 AND (L13 OR ?OLIVE?(W) OIL?)  
L30 0 SEA ABB=ON L28 AND ?PLANT?(W) ?MATERIAL?  
L31 11 SEA ABB=ON L28 AND ?PLANT?

L32 0 SEA ABB=ON L31 AND ?AUTOCLAVE?  
L33 0 SEA ABB=ON L31 AND (L17 OR ?TYROSOL?)  
L34 0 SEA ABB=ON L31 AND (HPLC OR ?HIGH?(W) ?PERFORM?(W) ?LIQUID?(W)  
?CHROMATOG?)  
L35 1 SEA ABB=ON L31 AND OIL?(4A) (?PRODUC? OR ?MANUF? OR ?PROCES?)

FILE 'USPATFULL' ENTERED AT 14:27:51 ON 23 FEB 2006

L36 26 SEA ABB=ON L21 AND (PRD<20040316 OR PD<20040316)  
L37 2 SEA ABB=ON L36 AND (HPLC OR ?HIGH?(W) ?PERFORM?(W) ?LIQUID?(W) ?C  
HROMATOG?)  
L38 26 SEA ABB=ON L37 OR L36  
L39 20 SEA ABB=ON L38 AND ?OLIVE?(W) OIL? *20 citz from uspatfull*  
L40 0 SEA ABB=ON L39 AND ?HYDROTHERM?

FILE 'AGRICOLA, BIOSIS, CABA, CROPB, CROPU, ESBIODBASE, IFIPAT, NTIS,  
SCISEARCH, MEDLINE, JAPIO, JICST-EPLUS' ENTERED AT 14:30:44 ON 23 FEB 2006

L41 11 SEA ABB=ON L31 OR L35 *11 citz from above databases*

FILE HOME

FILE HCAPLUS

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FILE COVERS 1907 - 23 Feb 2006 VOL 144 ISS 9  
FILE LAST UPDATED: 22 Feb 2006 (20060222/ED)

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FILE REGISTRY

Property values tagged with IC are from the ZIC/VINITI data file provided by InfoChem.

STRUCTURE FILE UPDATES: 22 FEB 2006 HIGHEST RN 874945-83-2  
DICTIONARY FILE UPDATES: 22 FEB 2006 HIGHEST RN 874945-83-2

New CAS Information Use Policies, enter HELP USAGETERMS for details.

TSCA INFORMATION NOW CURRENT THROUGH January 6, 2006

Please note that search-term pricing does apply when conducting SmartSELECT searches.

\*\*\*\*\*

\*

\* The CA roles and document type information have been removed from \*  
\* the IDE default display format and the ED field has been added, \*  
\* effective March 20, 2005. A new display format, IDERL, is now \*  
\* available and contains the CA role and document type information. \*

\*

\*

\*\*\*\*\*

Structure search iteration limits have been increased. See HELP SLIMITS for details.

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<http://www.cas.org/ONLINE/UG/regprops.html>

FILE AGRICOLA

FILE COVERS 1970 TO 7 Feb 2006 (20060207/ED)

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This file contains CAS Registry Numbers for easy and accurate substance identification.

FILE BIOSIS

FILE COVERS 1969 TO DATE.

CAS REGISTRY NUMBERS AND CHEMICAL NAMES (CNs) PRESENT FROM JANUARY 1969 TO DATE.

RECORDS LAST ADDED: 22 February 2006 (20060222/ED)

FILE CABA

FILE COVERS 1973 TO 3 Feb 2006 (20060203/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

The CABA file was reloaded 7 December 2003. Enter HELP RLOAD for details.

FILE CROPB

FILE LAST LOADED: 11 NOV 94 <941111/UP>

>>> EFFECTIVE JAN 1, 2004, THE 70% DISCOUNT FOR  
DERWENT CROP PROTECTION SUBSCRIBERS WILL BE NO  
LONGER VALID <<<

FILE CROPU

FILE LAST UPDATED: 5 JAN 2004 <20040105/UP>

FILE COVERS 1985 TO 2003

>>> CROPU WILL NO LONGER BE UPDATED AS OF 2004 <<<

>>> EFFECTIVE JAN 1, 2004, THE 70% DISCOUNT FOR  
DERWENT CROP PROTECTION SUBSCRIBERS WILL BE NO  
LONGER VALID <<<

FILE ESBIODBASE

FILE LAST UPDATED: 21 FEB 2006 <20060221/UP>

FILE COVERS 1994 TO DATE.

>>> SIMULTANEOUS LEFT AND RIGHT TRUNCATION AVAILABLE IN  
/CC, /ORGN, AND /ST <<<

FILE GENBANK

GENBANK (R) IS A REGISTERED TRADEMARK OF THE U.S. DEPARTMENT  
OF HEALTH AND HUMAN SERVICES.

This file contains CAS Registry Numbers for easy and accurate  
substance identification.

FILE IFIPAT

FILE COVERS 1950 TO PATENT PUBLICATION DATE: 21 Feb 2006 (20060221/PD)  
FILE LAST UPDATED: 22 Feb 2006 (20060222/ED)  
HIGHEST GRANTED PATENT NUMBER: US7003800  
HIGHEST APPLICATION PUBLICATION NUMBER: US2006037120  
UNITERM INDEXING IS AVAILABLE IN THE IFIUDB FILE  
UNITERM INDEXING LAST UPDATED: 9 Feb 2006 (20060209/UP)  
INDEXING CURRENT THROUGH PAT PUB DATE: 29 Nov 2005 (20051129/PD)

IFIPAT reloaded on 9/22/05. Enter HELP RLOAD for details.

FILE NTIS

FILE LAST UPDATED: 17 FEB 2006 <20060217/UP>  
FILE COVERS 1964 TO DATE.

<<< SIMULTANEOUS LEFT AND RIGHT TRUNCATION AVAILABLE IN  
THE BASIC INDEX (/BI) >>>

FILE SCISEARCH

FILE COVERS 1974 TO 16 Feb 2006 (20060216/ED)

SCISEARCH has been reloaded, see HELP RLOAD for details.

FILE MEDLINE

FILE LAST UPDATED: 22 FEB 2006 (20060222/UP). FILE COVERS 1950 TO DATE.

On December 11, 2005, the 2006 MeSH terms were loaded.

The MEDLINE reload for 2006 will soon be available. For details  
on the 2005 reload, enter HELP RLOAD at an arrow prompt (=>).  
See also:

<http://www.nlm.nih.gov/mesh/>  
[http://www.nlm.nih.gov/pubs/techbull/nd04/nd04\\_mesh.html](http://www.nlm.nih.gov/pubs/techbull/nd04/nd04_mesh.html)  
[http://www.nlm.nih.gov/pubs/techbull/nd05/nd05\\_med\\_data\\_changes.html](http://www.nlm.nih.gov/pubs/techbull/nd05/nd05_med_data_changes.html)  
[http://www.nlm.nih.gov/pubs/techbull/nd05/nd05\\_2006\\_MeSH.html](http://www.nlm.nih.gov/pubs/techbull/nd05/nd05_2006_MeSH.html)

OLDMEDLINE is covered back to 1950.

MEDLINE thesauri in the /CN, /CT, and /MN fields incorporate the  
MeSH 2006 vocabulary.

This file contains CAS Registry Numbers for easy and accurate

FILE JAPIO

FILE COVERS APR 1973 TO OCTOBER 27, 2005

>>> GRAPHIC IMAGES AVAILABLE <<<

>>> NEW IPC8 DATA AND FUNCTIONALITY NOT YET AVAILABLE IN THIS FILE.  
USE IPC7 FORMAT FOR SEARCHING THE IPC. WATCH THIS SPACE FOR FURTHER  
DEVELOPMENTS AND SEE OUR NEWS SECTION FOR FURTHER INFORMATION  
ABOUT THE IPC REFORM <<<

FILE JICST-EPLUS  
FILE COVERS 1985 TO 20 FEB 2006 (20060220/ED)

THE JICST-EPLUS FILE HAS BEEN RELOADED TO REFLECT THE 1999 CONTROLLED  
TERM (/CT) THESAURUS RELOAD.

FILE USPATFULL  
FILE COVERS 1971 TO PATENT PUBLICATION DATE: 21 Feb 2006 (20060221/PD)  
FILE LAST UPDATED: 21 Feb 2006 (20060221/ED)  
HIGHEST GRANTED PATENT NUMBER: US7003800  
HIGHEST APPLICATION PUBLICATION NUMBER: US2006037120  
CA INDEXING IS CURRENT THROUGH 21 Feb 2006 (20060221/UPCA)  
ISSUE CLASS FIELDS (/INCL) CURRENT THROUGH: 21 Feb 2006 (20060221/PD)  
REVISED CLASS FIELDS (/NCL) LAST RELOADED: Dec 2005  
USPTO MANUAL OF CLASSIFICATIONS THESAURUS ISSUE DATE: Dec 2005

=&gt; d que stat 122

L13 1 SEA FILE=REGISTRY ABB=ON "OLIVE OIL"/CN  
 L15 896 SEA FILE=HCAPLUS ABB=ON PHENOLS+ALL AND THERMAL DECOMPOSITION+  
 ALL  
 L16 4 SEA FILE=HCAPLUS ABB=ON L15 AND (L13 OR ?OLIVE?(W)OIL?)  
 L17 8 SEA FILE=HCAPLUS ABB=ON L15 AND ?PLANT?(W)?MATERIAL?  
 L18 11 SEA FILE=HCAPLUS ABB=ON L16 OR L17  
 L19 1 SEA FILE=HCAPLUS ABB=ON L18 AND ?AUTOCLAVE?  
 L20 8 SEA FILE=HCAPLUS ABB=ON L18 AND (L17 OR ?TYROSOL?)  
 L21 11 SEA FILE=HCAPLUS ABB=ON L18 OR L19 OR L20  
 L22 10 SEA FILE=HCAPLUS ABB=ON L21 AND (PRD<20040316 OR PD<20040316)

=&gt; d ibib abs 122 1-10

L22 ANSWER 1 OF 10 HCAPLUS. COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2004:80555 HCAPLUS

DOCUMENT NUMBER: 140:130123

TITLE: Recovery of phenolic compounds from a residual  
**plant material** by using a  
 hydrothermal process

INVENTOR(S): Ballesteros Perdices, Mercedes; Negro Alvarez, Maria  
 Jose; Manzanares Secades, Paloma; Ballesteros  
 Perdices, Ignacio; Oliva Dominguez, Jose Miguel

PATENT ASSIGNEE(S): Centro De Investigaciones Energeticas,  
 Medioambientales Y Tecnologicas (C.I.E.M.A.T.), Spain

SOURCE: PCT Int. Appl., 18 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: Spanish

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004009206	A1	20040129	WO 2003-ES85	20030220 <--
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
ES 2199069	A1	20040201	ES 2002-1671	20020717 <--
ES 2199069	B1	20050201		
AU 2003208731	A1	20040209	AU 2003-208731	20030220 <--
US 2004176647	A1	20040909	US 2004-801511	20040316 <--
PRIORITY APPLN. INFO.:			ES 2002-1671	A 20020717 <--
			WO 2003-ES85	W 20030220 <--

AB The method involves a hydrothermal processing of a residual **plant material** (especially waste from olive oil production) in a closed reactor (especially stirred autoclave). The process contains the following steps: (a) contacting of the raw material with hot water at a solid/liquid weight ratio of 1:(5-15) in the reactor, (b) stirring of the mixture, (c) heating to a temperature range of 180-240° and at such a pressure that the water remains in the liquid phase, (d) stirring for 4-30 min, and (e) cooling of the reactor to .apprx.40°, unloading of the mixture and recovery of the liquid fraction. Content of **tyrosol** and

only  
 cit  
 where  
 "stirred  
 autoclave"  
 appears

**hydroxytyrosol** is determined by using high-pressure liquid chromatog.  
The recovered phenolic compds. are suitable as antioxidants for food and pharmaceutical industries.

REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L22 ANSWER 2 OF 10 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2002:379571 HCAPLUS

DOCUMENT NUMBER: 137:327299

TITLE: Partly chemical analysis of liquid fraction of flash pyrolysis products from biomass in the presence of sodium carbonate

AUTHOR(S): Demirbas, Ayhan

CORPORATE SOURCE: Department of Chemical Education, Karadeniz Technical University, Trabzon, TR-61035, Turk.

SOURCE: Energy Conversion and Management (2002), 43(14), 1801-1809

CODEN: ECMADL; ISSN: 0196-8904

PUBLISHER: Elsevier Science Ltd.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Flash pyrolysis products from hazelnut shell and tea factory waste obtained in a pyrolysis apparatus were analyzed. Comparison of the pyrolytic products of the structural components indicates the origin of each product. A promising route for processing biomass is pyrolytic conversion, which has been conducted under a variety of exptl. conditions, resulting in production of charcoal, tarry material, aqueous fraction and gaseous products. Methanol can be produced by pyrolysis of biomass. Methanol mainly arises from methoxyl groups of uronic acid and from the breakdown of Me esters and/or ethers from decomposition of pectin-like **plant materials**. Acetic acid comes from the elimination of acetyl groups originally linked to the xylose unit. The pyroligneous acid consists of about 50% methanol, acetone, **phenols** and water. The yields of acetic acid from hazelnut shell for non-alkali and alkali runs increased from 12.80% to 16.30% and from 16.70% to 22.18% while the final pyrolysis temperature was increased from 675 to 825 K, resp. The yields of methanol from hazelnut shell for non-alkali and alkali runs increased from 7.26% to 10.30% and from 9.72% to 12.61% while the final pyrolysis temperature was increased from 675 to 875 K, resp. The maximum yields of acetic acid from tea waste for non-alkali and alkali runs were 7.13% and 9.20% at 825 K, resp. The maximum yields of methanol from tea waste for non-alkali and alkali runs were 8.82% (at 875 K) and 10.50% (at 925 K), resp.

REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L22 ANSWER 3 OF 10 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2001:371307 HCAPLUS

DOCUMENT NUMBER: 135:121696

TITLE: Management induced organic matter differentiation in grassland and arable soil: a study using pyrolysis techniques

AUTHOR(S): Nierop, Klaas G. J.; Pulleman, Mirjam M.; Marinissen, Joke C. Y.

CORPORATE SOURCE: Department of Environmental Sciences, Laboratory of Soil Science and Geology, Wageningen University, Wageningen, 6700 AA, Neth.

SOURCE: Soil Biology & Biochemistry (2001), 33(6), 755-764

CODEN: SBIOAH; ISSN: 0038-0717

PUBLISHER: Elsevier Science Ltd.  
DOCUMENT TYPE: Journal  
LANGUAGE: English

AB Differences in agricultural management and land use lead to differences in soil structure, soil organic matter (SOM) dynamics and composition. We investigated the SOM composition at 3 depth layers in a permanent pasture (PP), an organic arable (OA) and a conventional arable (CA) field within one soil series in marine loam deposits in The Netherlands. Both arable fields were in the grass phase of the rotation. The chemical composition of SOM was determined by a combination of conventional pyrolysis-gas chromatog./mass spectrometry (Py-GC/MS) and of thermally-assisted hydrolysis and methylation (THM) with tetramethylammonium hydroxide (TMAH). In PP, SOM was composed of relatively little decomposed, mainly grass-derived material comprising polysaccharides, lignin, aliphatic compds. (extractable lipids, cutin, suberin) and proteins. With depth, plant-derived constituents decreased, whereas microbial and humified material predominated. Both arable soils contained mainly strongly humified **plant material** and microbially altered proteineous material that showed heterocyclic N-compds. together with alkylbenzenes and **phenols** upon pyrolysis. With THM, small traces of plant-derived alkanols and cutin/suberin were observed in the arable soils. The upper layers of OA contained little lignin, which can only be derived from the grass vegetation or manure inputs since last plowing (2 yr before), since it was not found in the whole plow layer. Overall SOM composition is therefore hardly affected by organic farming compared to conventional management. The differences in SOM content and composition between the pasture and arable fields can be ascribed to differences in input and depth distribution of fresh organic materials. A difference in phys. protection of easily mineralizable SOM between pasture and arable soils is also likely to contribute.

REFERENCE COUNT: 51 THERE ARE 51 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L22 ANSWER 4 OF 10 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2001:276937 HCAPLUS  
DOCUMENT NUMBER: 135:154921  
TITLE: Biomass to methanol via pyrolysis process  
AUTHOR(S): Gullu, D.; Demirbas, A.  
CORPORATE SOURCE: P.K. 216, Trabzon, TR-61035, Turk.  
SOURCE: Energy Conversion and Management (2001),  
42(11), 1349-1356  
CODEN: ECMADL; ISSN: 0196-8904

PUBLISHER: Elsevier Science Ltd.  
DOCUMENT TYPE: Journal; General Review  
LANGUAGE: English

AB A review with 33 refs. Methanol can be used as one possible replacement for conventional gasoline and Diesel fuel. Thermal depolymn. and decomposition of biomass, including cellulose, hemicelluloses and lignin, formed liquid and gaseous products as well as a solid residue of charcoal. A promising route for processing biomass is pyrolytic conversion, which was conducted under a variety of exptl. conditions, resulting in producing charcoal, tarry material, an aqueous fraction and gaseous products. The pyrolygneous acid consists of .apprx.50% methanol, acetone, **phenols** and water. Methanol can be produced by pyrolysis of biomass. Methanol mainly arises from the methoxyl groups of uronic acid and from the breakdown of Me esters and/or ethers from decomposition of pectin-like **plant materials**. Acetic acid mainly comes from the acetyl groups of the hemicelluloses.

REFERENCE COUNT: 33 THERE ARE 33 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT



L22 ANSWER 5 OF 10 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1992:530177 HCAPLUS

DOCUMENT NUMBER: 117:130177

TITLE: Effects of antioxidants on the thermal oxidation of oils and decomposition of tocopherol in vegetable oils

AUTHOR(S): Kajimoto, Goro; Kanomi, Yuki; Kawakami, Hideyuki; Hamatani, Mifo

CORPORATE SOURCE: Fac. Nutr., Kobe Gakuin Univ., Kobe, 651-21, Japan

SOURCE: Nippon Eiyo, Shokuryo Gakkaishi (1992), 45(3), 291-5

CODEN: NESGDC; ISSN: 0287-3516

DOCUMENT TYPE: Journal

LANGUAGE: Japanese

AB The effects of antioxidants and the synergistic effect of ascorbyl palmitate (AsP) on the deterioration of oil and decomposition of tocopherol (Toc) in oil by heating were investigated. Olive and soybean oils mixed with antioxidants [BHA, sesamol, eugenol,  $\beta$ -carotene, quercetin, flavone, and tert-butylhydroquinone (TBHQ)] or mixed with AsP were heated in glass tubes at 180°. TBHQ and sesamol showed a greater preventive effect on the **thermal decomposition** of Toc in oil (especially **olive oil**) than eugenol, quercetin, and BHA, and the preventive effect of TBHQ increased as the concentration of TBHQ became higher. On the other hand, addition of  $\beta$ -carotene and flavone had no effect. The combination of AsP with BHA or flavone showed synergistic effect in prevention of Toc decomposition in **olive oil**.

L22 ANSWER 6 OF 10 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1992:446983 HCAPLUS

DOCUMENT NUMBER: 117:46983

TITLE: Effects of mixtures of some additives and ascorbyl stearate on the **thermal decomposition** of tocopherol in vegetable oils

AUTHOR(S): Kajimoto, Goro; Kanomi, Yuki; Yoshida, Hiromi; Shibahara, Akira

CORPORATE SOURCE: Fac. Nutr., Kobe Gakuin Univ., Kobe, 651-21, Japan

SOURCE: Nippon Eiyo, Shokuryo Gakkaishi (1991), 44(6), 493-8

CODEN: NESGDC; ISSN: 0287-3516

DOCUMENT TYPE: Journal

LANGUAGE: Japanese

AB Oryzanol, BHT, sesamol, and ascorbyl stearate (AsS) prevented decomposition of tocopherols (total  $\alpha$ ,  $\beta$ ,  $\gamma$ , and  $\delta$ ) in oils only during the early period of heating at 180°. Combinations of AsS and oryzanol, sesamol, or BHT had a prolonged stabilization effect with higher potency as the concentration of AsS increased. Browning on heating was marked in sesamol-containing **olive oil**, and this was greatly decreased by AsS addition. Mixing thioldipropionic acid with AsS prevented **thermal decomposition** of tocopherol and browning, and decreased anisidine and carbonyl values in oils synergistically.

L22 ANSWER 7 OF 10 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1973:420547 HCAPLUS

DOCUMENT NUMBER: 79:20547

TITLE: Determination of the composition of products from the vacuum thermolysis of cellulose-containing **plant materials**. I. Determination of levoglucosan and 1,6-anhydro- $\beta$ -D-glucofuranose by inversion and polarimetric methods

AUTHOR(S): Zakis, G.; Alsups, I.; Neiberte, B.

CORPORATE SOURCE: Inst. Khim. Drev., Riga, USSR  
SOURCE: Khimiya Drevesiny (1968-74) (1972), (12),  
107-14

CODEN: KHDRAN; ISSN: 0453-8226

DOCUMENT TYPE: Journal

LANGUAGE: Russian

AB The content of reducing substances (RS), levoglucosan (I) [498-07-7], and 1,6-anhydro- $\beta$ -D-glucofuranose (II) [7425-74-3] was estimated in the vacuum pyrolysis products of corncob lignocellulose (III) [11132-73-3]. III contains I, II, and 2 types of RS; the RS which are unchanged ( $\Delta$ RS = 0), destroyed ( $\Delta$ RS is smaller than zero), or increased, ( $\Delta$ RS is greater than zero) after inversion with 10% H<sub>2</sub>SO<sub>4</sub> at 100.deg.. Only when  $\Delta$ RS = 0 the amts. of I and II can be determined by precipitating their inversion products with Pb (OH)<sub>2</sub>(OAc)<sub>2</sub> (IV) or 2,4-dinitrophenylhydrazine (V) and polarography. The amts. of RS, present in the pyrolysis products before the inversion, can be reduced by alkaline treatment. This causes the aldol condensation of the aldehydes, but it does not remove polyfunctional **phenols**, which also react with IV or V and may interfere with the determination of I and II.

L22 ANSWER 8 OF 10 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1969:414345 HCAPLUS

DOCUMENT NUMBER: 71:14345

TITLE: **Phenols** obtained from lignins of various  
**plant materials**

AUTHOR(S): Panasyuk, L. V.; Travleeva, L. V.; Panasyuk, V. G.

CORPORATE SOURCE: Dnepropetrovsk. Khim.-Tekhnol. Inst., Dnepropetrovsk,  
USSR

SOURCE: Khimiya Drevesiny (1968-74) (1968), 1, 301-4

CODEN: KHDRAN; ISSN: 0453-8226

DOCUMENT TYPE: Journal

LANGUAGE: Russian

AB The yield of **phenols** in the **thermal decomposition** of different **plant materials** varies from 1.75 to >12%. At  $\leq 460^\circ$ , the qual. composition of **phenols** depends only on the nature and structure of the lignin and is not affected by the method of thermal degradation. Lignins from coniferous wood yield considerable amts. of guaiacol and small amts. of cresols. Lignins from sunflower husks and cottonseed hulls yield primarily m-cresol. Corncob lignin yields o- and p-cresols.

L22 ANSWER 9 OF 10 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1941:37649 HCAPLUS

DOCUMENT NUMBER: 35:37649

ORIGINAL REFERENCE NO.: 35:5881b-i, 5882a-i

TITLE: Synthetic estrogens of the diphenylethane series

AUTHOR(S): Bretschneider, Hermann; de Jonge-Bretschneider, Alice;  
Ajtai, Nikolaus

SOURCE: Ber. (1941), 74B, 571-88

DOCUMENT TYPE: Journal

LANGUAGE: Unavailable

AB Studies carried out some time ago (Hungarian pat. application, Dec. 24, 1938) lead, almost simultaneously with other workers (Dodds and co-workers, C. A. 33, 2201.2; v. Wessely and co-workers, C. A. 33, 4590.7) but by different methods, to the discovery of the estrogenically extremely active (p-HOC<sub>6</sub>H<sub>4</sub>CH<sub>2</sub>)<sub>2</sub> (I), m. 187°, and one (II) of the stereoisomeric forms, somewhat less active, of 2,3-bis(4-hydroxy-2-methylphenyl)butane. The starting point for these syntheses was the observation of Thiele (C. A. 5, 457) that (PhCH<sub>2</sub>N)<sub>2</sub> decomps. into (PhCH<sub>2</sub>)<sub>2</sub> and N at relatively low temps. Phenol ketones or their derivs.

are converted into the diazines,  $(RR'C:N)_2$  ( $R = \text{alkyl}$ ,  $R' = \text{aryl}$ ), which on catalytic hydrogenation take up, generally quite smoothly, about 4 atoms H. The resulting products, especially where  $R'$  is hydroxylated, are not very easy to handle because of their sensitivity. From the reactions of both the crude amorphous hydrogenation products and their unstable crystalline solvates the authors are inclined to believe that they are the tetrahydrides,  $(RR'CHNH)_2$ ; they are distinctly alkaline to litmus, are autoxidizable (in the form of their ethers and esters also) and react in solution with I,  $NH_3-AgNO_3$  and O, with the latter especially in the presence of Cu compds. Perhaps the primarily formed hydrazo derivs. are themselves thermolabile, but among the decomposition products there are found basic substances together with the small amts. of  $(RR'CH)_2$  derivs. formed. If, however, they are subjected to oxidation until they no longer react with the oxidizing agent (I or O was generally used) there can be isolated 30-80% (based on the ketazine) of crystalline products which are assumed to be dihydrides,  $(RR'CHN:)_2$ .  $RR'C:NNHCHRR'$ , as indicated not only by their composition but also by their weakly basic character, their stability toward oxidizing agents, their hydrolytic cleavage and their **thermal decomposition** Whereas hydrolysis with HCl gives the N as  $N_2H_4 \cdot 2HCl$  in good yield (absence of organic bases) and, in the ratio of about 1:1, the original ketone  $RCOR'$  and a polymer, on **thermal decomposition** all the N is split off in elementary form. This decomposition occurs quantitatively at temps. a little above  $120^\circ$ ; the resulting product consists of at least 60% (based on the dihydride) of an equilibrium mixture of the 2 isomeric (dl and meso)  $(RR'CH)_2$ , always, however, accompanied by products of half-mol.-weight which have not yet been identified; the latter are formed in greater amount from the free **phenols** than from their esters. Without isolating the intermediate azine hydrides, I was obtained by subjecting the hydrogenation product of the ketazine to the dehydrogenating action of Pd sponge but the yields were quite low because of the considerable amts. of half-mol.-weight products formed. The above series of reactions could be especially well followed with compds. whose HO groups were blocked. Thus, Foldi and Fodor (following abstract) converted the azine of p-MeOC<sub>6</sub>H<sub>4</sub>COEt through 2 simultaneously formed dihydrides, m.  $77^\circ$  and  $58-65^\circ$ , into the likewise simultaneously formed di-Me ethers (meso, m.  $144^\circ$ ; dl, m.  $55^\circ$ ) of I. From 4,4'-diacetoxypropiophenone azine, m.  $135.5-6.5^\circ$ , the present authors obtained, through a labile dihydride, m.  $115-16^\circ$ , of uncertain homogeneity, the meso-diacetate, m.  $141^\circ$ , of I. The relationships with the 2 forms (m.  $187^\circ$  and  $128^\circ$ ) of I were established by acetylation or methylation, and, inversely, by saponification. Likewise, a crystalline but not certainly homogeneous product obtained by oxidation of the hydrogenated azine of p-HOC<sub>6</sub>H<sub>4</sub>COEt gave in good yield, on methylation, the F. and F. dihydride m.  $77^\circ$ . Similar observations were made on 2,4-Me(HO)C<sub>6</sub>H<sub>3</sub>COMe and its Me ether. After certain difficulties had been overcome there was obtained a highly active estrogenic substance, m.  $192^\circ$  believed to be II. Its isomer (presumably dl) was certainly present but the authors did not have an opportunity to isolate it. A 2nd method of arriving at substances of the above type is based on Busch's (C. A. 4, 1490) work on the action of EtMgBr on anisaldazine. By cautious work it was possible to isolate the F. and F. labile compound m.  $77^\circ$ .

Decomposition of this compound or the total ether-soluble product of the Grignard

reaction again gave the 2 Me ethers, m.  $144^\circ$  and  $55^\circ$ , of I. Dodds (C. A. 33, 5132.3) carried out the same reaction but did not observe the intermediate N-containing product, and because of the different conditions under which he worked his yield was much smaller. In view of the discovery of this intermediate product, it can be stated with certainty that 2 mols. Grignard reagent, and not only 1 as believed by Busch, add

at the 2 double bonds of the aldazine or its derivative. Many attempts were made to correlate the compds. of type I with the corresponding highly active (PhCH:)2 derivs., the most important representative of which is diethylstilbestrol (III). It was attempted to effect this both by modifying the decomposition of the labile N-containing intermediate products and by dehydrogenation or oxidation of the I. Neither method gave the desired product but the 2nd method gave results worth recording. Pd sponge under conditions which result in the dehydrogenation of other ethane bridges (e. g., (NCC6H4CH2)2  $\rightarrow$  (NCC6H4CH:)2, Knoevenagel, Ber. 36, 2861(1903)) left the isomeric Me ethers of I almost unchanged (the free meso-I, m. 186°, under these conditions is attacked to a considerable extent but breaks down into half-mol.-weight fragments), but Pd-charcoal reacted entirely differently. It attacked both Me ethers, but whereas the 144° ether gave only 28% identifiable material (unchanged ether), 35% of the 55° ether was recovered unchanged and 42% in the form of its isomer. Hence it is possible to pass from the physiologically less active dl-forms (through their di-Me ethers) into the more valuable meso-forms. It was also of interest from the physiol. standpoint to prepare the mono-Me ether (IV) of I. This it became possible to do in 3 ways after it had been discovered that IV cannot be extracted from ether with dilute alkali but gives with more concentrated alkali a salt insol. in ether and difficultly soluble in water. The 3 methods were partial methylation, partial saponification and (of little importance from a preparative standpoint

but interesting theoretically) simultaneous decomposition of a mixture of p-hydroxy-

and p-methoxypropiophenone azine hydrides. IV, m. 120-1°, b0.001 140-50° (bath temperature), is very easily soluble in ether and MeOH, difficultly in water, gives no color with alc. FeCl3; propionate, m. 85-7°, b0.001 140-60° (air bath). Below are the results, resp., of Allen and Doisy tests on mice and on rats and of vesicular gland-growth tests on infantile rats. The values given for the A. and D. tests are the min. amts. (in  $\gamma$ ) in 0.3 cc. **olive oil** which, administered subcutaneously in three 0.1-cc. doses, gave a pos. response in at least 75% of the animals; the vesicular gland results are the growths (in mg.) produced by 10 daily administrations of 1  $\gamma$  each. Estrone 0.1, 0.7, 11; estradiol 0.033, 0.35, 19.5; III 0.075, 0.15, 21.5; I 0.18, 0.15, 20.0; III propionate 0.15, 0.4, 16.0; I propionate 0.30, 0.4, 15.0; II 0.2, 0.3, -. 4-Hydroxy-2-methylacetophenone azine, m. 251-3°; diacetate, m. 129-30°. II, m. 191-2°; dipropionate, bvac. 210°, m. 123-4°; diacetate, m. 164°; di-Me ether, m. 137-9° prepared by methylating II with Me2SO4 in NaOH-MeOH or from 4-methoxy-2-methylacetophenone azine, m. 110-11°.

L22 ANSWER 10 OF 10 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1938:44544 HCAPLUS  
DOCUMENT NUMBER: 32:44544  
ORIGINAL REFERENCE NO.: 32:6194b-g  
TITLE: The origin of petroleum  
AUTHOR(S): Berl, E.  
SOURCE: Am. Inst. Mining Met. Engrs. Tech. Pub. (1938), No. 920, 18 pp.  
DOCUMENT TYPE: Journal  
LANGUAGE: Unavailable

AB Various theories for the origin of petroleum are reviewed and rejected. Cellulose, other carbohydrates and similar products, e. g., alginic acids and pectic acids present in organic **plant materials** such as seaweed and algae, can be transformed in the laboratory into asphalt-like

materials under conditions that may have prevailed during their formation in nature. Asphalts are the parent material of crude oil; aliphatic, aromatic and hydroaromatic hydrocarbons can be formed from asphalts. The carbohydrate content of plant debris that is covered by inorg. material can be decomposed by heat-treatment with formation of H<sub>2</sub>O-soluble substances which undergo further geochem. changes and form crude oil, or they may be converted into materials rich in C and poor in O in such a manner that H<sub>2</sub>O-insol. carbohydrates pass only partly through the H<sub>2</sub>O-soluble stage and form bituminous coals. Cellulose is more stable than the lower carbohydrates, and cellulose humic acids are more stable still. O increases the speed of reaction more than 30 times. Products of bacterial action are nearly the same as those from a pure chemical decomposition

#### Bacterial

decomposition may end before complete decomposition. Certain bacteria that decompose

cellulose quickly do not affect cellulose humic acids or lignin humic acids. Thermoinstability parallels ease of bacterial action. Pressure has great influence on **thermal decomposition**. Increase in ratio of alkali to cellulose decreases formation of solid rich in C. At certain alkali ratios, bitumen alone results. Protoproducts analyzing C 78, H 12 and O 10% can be made in the laboratory by **thermal decomposition** of carbohydrates or cellulose humic acids in the presence of limestone, dolomite, magnesite or zeolite. The higher the temperature, the more fluid is the product. About 57% of the C of cellulose can be converted into these protoproducts. They contain about 30% phenolcarboxylic acids, 4.5% **phenols** and 63.5% neutral substances. The protoproducts cracked at 110 atmospheric and > 400° give hydrocarbons and asphalt-like residues. Hydrogenation of the protoproducts yields a material identical with mineral oil; pure hexane and paraffin were isolated. Hydrogenation of Trinidad asphalt gives identical end products.

=> d que stat l41

L27 228 SEA ?PHENOLS? AND ?THERMAL?(W) ?DECOMPOSITION?  
L28 199 DUP REMOV L27 (29 DUPLICATES REMOVED)  
L31 11 SEA L28 AND ?PLANT?  
L35 1 SEA L31 AND OIL?(4A) (?PRODUC? OR ?MANUF? OR ?PROCES?)  
L41 11 SEA L31 OR L35

=> d ibib abs l41 1-11

L41 ANSWER 1 OF 11 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on STN  
ACCESSION NUMBER: 2005:393082 BIOSIS  
DOCUMENT NUMBER: PREV200510178610  
TITLE: Determination of optimum conditions for the analysis of

volatile components in pine needles by double-shot  
pyrolysis-gas chromatography-mass spectrometry.

AUTHOR(S): Lee, Jae-Gon [Reprint Author]; Lee, Chang-Gook; Kwag,  
Jae-Jin; Buglass, Alan J.; Lee, Gae-Ho

CORPORATE SOURCE: KT and G Cent Res Inst, Dept Tobacco Res, Taejon 305805,  
South Korea  
jgolee@ktng.com

SOURCE: Journal of Chromatography A, (SEP 30 2005) Vol. 1089, No.  
1-2, pp. 227-234.

CODEN: JOCRAM. ISSN: 0021-9673.

DOCUMENT TYPE: Article

LANGUAGE: English

ENTRY DATE: Entered STN: 28 Sep 2005

Last Updated on STN: 28 Sep 2005

AB The optimum conditions for the analysis of the volatile organic components  
of pine needles from *Pinus densiflora* using double-shot pyrolysis-gas  
chromatography-mass spectrometry (DSP-GC-MS) were investigated with  
respect to thermal desorption temperature and duration of heating. A  
total of 41 compounds were identified using thermal desorption  
temperatures of 150 degrees C, 200 degrees C, 250 degrees C and 300  
degrees C. **Thermal decomposition** products, which  
include acetol, acetic acid, furfurals and **phenols**, were  
observed only at thermal desorption temperatures exceeding 250 degrees C:  
they were not observed in the extract from a simultaneous distillation  
extraction (SDE) method. Heating times of 1 s, 6 s, 30 s, 150 s and 300 s  
were investigated at the thermal desorption temperature of 200 degrees C,  
whence it was found that **thermal decomposition**  
products were produced only at heating times over 30 s. The optimum  
pyrolyzer conditions for the analysis of pine needles using DSP-GC-MS is  
200 degrees C for 6 s. Under these conditions, this method gives  
comparable results to the SDE method. (c) 2005 Elsevier B.V. All rights  
reserved.

L41 ANSWER 2 OF 11 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on STN  
ACCESSION NUMBER: 2003:174870 BIOSIS  
DOCUMENT NUMBER: PREV200300174870  
TITLE: Interaction of tocopherols and phenolic compounds with

membrane lipid components: Evaluation of their antioxidant  
activity in a liposomal model system.

AUTHOR(S): Gutierrez, M. Elena; Garcia, Antonio F.; De Madariaga, M.  
Africa; Sagrista, M. Luisa; Casado, Francisco J.; Mora,  
Margarita [Reprint Author]

CORPORATE SOURCE: Department of Biochemistry and Molecular Biology, Faculty  
of Chemistry, University of Barcelona, Marti i Franques 1,  
08028, Barcelona, Spain  
mora@sun.bq.ub.es

SOURCE: Life Sciences, (April 11 2003) Vol. 72, No. 21, pp.

2337-2360. print.  
ISSN: 0024-3205 (ISSN print).

DOCUMENT TYPE: Article  
LANGUAGE: English  
ENTRY DATE: Entered STN: 9 Apr 2003  
Last Updated on STN: 9 Apr 2003

AB This paper describes the use of complex liposomes as real membrane models to evaluate the potential benefits of several antioxidants in relation to lipid peroxidation. The xanthine oxidase/Fe<sup>3+</sup>-ADP-EDTA and the Fe<sup>2+</sup>/H<sub>2</sub>O<sub>2</sub> systems have been used to generate hydroxyl radicals and the water soluble azo-compound 2,2'-azobis(2-amidinopropane) dihydrochloride (AAPH) to generate carbon centered radicals (A.) by **thermal decomposition**. The antioxidant behavior of the rosemary and citrus **plant** extracts and vitamin-E and vitamin-E acetate alpha-tocopherols have been analyzed. The order of effectiveness in avoiding radical chain reactions has been established by using the calorimetric thiobarbituric acid reaction and the fluorescent probe DPH-PA. ESR spectroscopy has been used to carry out the pursuit of the oxidation processes on the basis of the identification of the radical species resulting from the oxidant system and the ability of the antioxidants to act as scavengers for hydroxyl and AAPH-derived radicals. The modification of the main transition temperature for the lipid mixture and the splitting of the calorimetric peak in the presence of the antioxidants were demonstrated by differential scanning calorimetry. The results obtained showed that the **phenols**-containing **plant** extracts and alpha-tocopherols perturb the phase behavior of the BBE lipid bilayer and have a fluidifying effect that could favor the known antioxidant capability and scavenging characteristics of these compounds. <sup>31</sup>P-NMR results could be interpreted as, after the incorporation of these antioxidants, those lipid molecules interacting with antioxidants give rise to lamellar phase spectral components with resonance position at lower fields or to isotropic signals in accordance with a higher motion of their phosphate groups.

L41 ANSWER 3 OF 11 CABA COPYRIGHT 2006 CABI on STN

ACCESSION NUMBER: 2005:160500 CABA  
DOCUMENT NUMBER: 20053158390  
TITLE: Anti-fungal properties of the pyroligneous liquors from the pyrolysis of softwood bark  
AUTHOR: Mourant, D.; Yang DianQing; Lu Xiao; Roy, C.; Yang, D. Q.; Lu, X.  
CORPORATE SOURCE: Departement de genie chimique, Universite Laval, Ste-Foy, Quebec G1K 7P4, Canada.  
SOURCE: Wood and Fiber Science, (2005) Vol. 37, No. 3, pp. 542-548. 15 ref.  
Publisher: Society of Wood Science and Technology. Madison  
ISSN: 0735-6161  
PUB. COUNTRY: United States  
DOCUMENT TYPE: Journal  
LANGUAGE: English  
ENTRY DATE: Entered STN: 20051007  
Last Updated on STN: 20051007

AB **Thermal decomposition** of balsam fir (*Abies balsamea*) and white spruce (*Picea glauca*) mixed bark residues at 450[deg]C and under vacuum (<20 kPa absolute) resulted in high yields of pyroligneous liquors rich in **phenols**. The pyrolytic aqueous condensate fractionation in 4 distinct parts was accomplished by a liquid-liquid extraction method. Each fraction was tested for its antifungal properties. Petri dish bioassays were conducted using 2 brown rot fungi (*Postia placenta* and *Gloeophyllum*

trabeum) and 2 white rot fungi (*Irpex lacteus* and *Trametes versicolor*). The fraction obtained by ethyl ether extraction and containing organic acids, **phenols**, and phenol-derivatives (3.0% by weight), benzenediols, (3.9% by weight) and a variety of other products (quinones, furans, etc.), produced the largest inhibition of the decay fungi, while the neutral fraction, leftovers of the precipitation of the aforementioned fraction, showed no inhibition effects. *T. versicolor* was the most sensitive to these fractions, while *I. lacteus* was the least sensitive. The addition of CuSO<sub>4</sub> to the water-soluble organic compounds improved the antifungal activity.

L41 ANSWER 4 OF 11 CABA COPYRIGHT 2006 CABI on STN

ACCESSION NUMBER: 2003:90238 CABA

DOCUMENT NUMBER: 20033060451

TITLE: Does coffee drinking influence plasma antioxidant capacity?

AUTHOR: Natella, F.; Scaccini, C.

CORPORATE SOURCE: Free Radical Research Group - INRAN - Via Ardeatina 546, 00178 Roma, Italy. scaccini@inran.it

SOURCE: 19eme Colloque Scientifique International sur le Cafe, Trieste, Italy, 14-18 mai 2001, (2001) pp. 1-6. 22 ref.  
 Publisher: Association Scientifique Internationale du Cafe (ASIC). Paris  
 Price: Book chapter; Conference paper  
 Meeting Info.: 19eme Colloque Scientifique International sur le Cafe, Trieste, Italy, 14-18 mai 2001.  
 ISBN: 2-90012-18-9

PUB. COUNTRY: France

DOCUMENT TYPE: Journal

LANGUAGE: English

ENTRY DATE: Entered STN: 20030606

Last Updated on STN: 20030606

AB Absorption, metabolic fate and availability for antioxidant protection in humans of dietary **plant** constituents, such as flavonoids and related **polyphenols**, are still not fully explained. Moreover, the definition "**plant phenols**" includes thousand of compounds with different chemical structures corresponding to different antioxidant activities. As chemical structure is an important determinant in their bioavailability. The profile of phenolic compounds in plasma can be quite different from that of the original dietary source due to metabolization and biotransformation. Recently, a number of beverages derived from vegetables have been tested for their in vitro and in vivo antioxidant activity (white and red wine, green and black tea, beer). A straightforward analysis of these studies confirm that (i) the capacity of a food to transfer its antioxidant activity is linked to several know and unknown chemical/biochemical/physiological characteristics, (ii) the effect of food **phenols** on the redox balance in vivo can not be a simple extrapolation of its activity in vitro. Coffee contains several phenolic components, other than tocopherols, endowed with antioxidant capacity: chlorogenic acids (esters of some cinnamic acids with quinic acid), and caffeic, ferulic, p-coumaric acids in free form. Black tea contains catechins and thearubigins and theaflavines, which are oxidation products of catechins formed during enzymatic oxidation by polyphenol oxidase in fresh tea leaves. In this study, we concentrated on the capacity of coffee to affect the plasma redox homeostasis in humans, using tea as positive control. In two different sessions, a standard amount (200 ml) of brewed coffee or black tea was administered in fasting conditions to 10 healthy non-smoker moderate-coffee drinkers from Italy. Beverages



were taken within 10 minutes from brewing. Plasma at time 0, and 1 and 2 hours after coffee/tea administration was analysed for: uric acid; alpha-tocopherol and glutathione (reduced and oxidized); total antioxidant capacity, by measuring the competition with the bleaching of two different target molecules (r-phycoerythrin and crocin) triggered by the peroxy radicals generated by **thermal decomposition** of 2,2-azobis (2 aminopropane)-chlorohydrate (AAPH). The ingestion of 200 ml of coffee in bolus produced a 5.5% increase ( $P < 0.05$ ) in the plasma antioxidant capacity (by the r-phycoerythrin test) at  $t=1$ , maintaining a 4% increase after two hours. The 4.7% increase one hour after the tea administration did not reach statistical significance, as a consequence of different individual responses. As for coffee, the antioxidant capacity measured by the crocin test gave a similar trend in the modulation of antioxidant activity, even if the differences were not statistically significant. No effect was seen in the case of tea drinking using this test. The explanation of the discrepancy between the two methods employed can be found in the capacity of some molecules to affect the plasma concentration of uric acid, coupled with a different sensibility to uric acid of the two methods. In fact, only tea drinking produces a significant increase of plasma uric acid, a component of the group of molecules with antioxidant activity contributing to the AC as measured by the r-phycoerythrin test, but not by the crocin test. The other parameters of antioxidant status do not change significantly, except for a significant increase of alpha-tocopherol 2 h after tea drinking. From all that, we can advance the hypothesis that the increase of plasma antioxidant capacity (by crocin test) induced by coffee is due to antioxidants derived from coffee, while in the case of tea the (although not statistically significant) increase is due to the increase of uric acid. At the moment we are not able to justify why tea drinking induces an increase of uric acid and coffee drinking not. However, phenolic composition and quantitative distribution in different phenolic classes can be responsible for this phenomenon.

L41 ANSWER 5 OF 11 IFIPAT COPYRIGHT 2006 IFI on STN  
 AN 11024690 IFIPAT;IFIUDB;IFICDB  
 TITLE: METHOD OF DISPERSING HYDROCARBON FOULANTS IN  
 HYDROCARBON PROCESSING FLUIDS  
 INVENTOR(S): Howdeshell; Michael James, Sugar Land, TX, US  
 PATENT ASSIGNEE(S): Unassigned  
 PATENT ASSIGNEE PROBABLE: NALCO CO (Probable)  
 AGENT: NALCO COMPANY, 1601 W. DIEHL ROAD, NAPERVILLE, IL,  
 60563-1198, US

	NUMBER	PK	DATE
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PATENT INFORMATION:	US 2005263437	A1	20051201
APPLICATION INFORMATION:	US 2004-854003		20040526
FAMILY INFORMATION:	US 2005263437		20051201
DOCUMENT TYPE:	Utility		
	Patent Application - First Publication		
FILE SEGMENT:	CHEMICAL APPLICATION		

NUMBER OF CLAIMS: 19 7 Figure(s).  
 DESCRIPTION OF FIGURES:

FIG. 1 is a schematic diagram of a representative quench water loop showing the quench water tower 1, quench water drum separator 2, fin fan 3, and heat exchangers 4a, 4b, 5a, 5b, 6a, 6b and 7.

FIG. 2 is a plot of fin fan 3 efficiency data (as percent design U) vs time both before and after cleaning with organic solvents according to this

invention.

FIG. 3 is a plot of heat exchanger 6a and 6b efficiency data (as percent design U) vs time both before and after cleaning with organic solvents according to this invention.

FIG. 4 is a plot of heat exchanger 5a and 5b efficiency data (as percent design U) vs time both before and after cleaning with organic solvents according to this invention.

FIG. 5 is a plot of heat exchanger 4a and 4b efficiency data (as percent design U) vs time both before and after cleaning with organic solvents according to this invention.

FIG. 6 is a plot of heat exchanger 7 efficiency data (as percent design U) vs time both before and after cleaning with organic solvents according to this invention.

FIG. 7 is shows an embodiment of this invention in which an organic solvent as described herein is used for cleaning a quench water separator drum 8.

AB A method of dispersing, dissolving, or reducing the viscosity of hydrocarbon foulants including heavy oil, tars, asphaltenes, polynuclear aromatic hydrocarbons, coke, polymers, light oil, oxidized hydrocarbon and **thermal decomposition** products, and the like in fluids in contact with hydrocarbon processing equipment comprising contacting the foulant with an effective amount of a halogen-free organic solvent having a density greater than water at the processing temperature.

CLMN 19 7 Figure(s).

FIG. 1 is a schematic diagram of a representative quench water loop showing the quench water tower 1, quench water drum separator 2, fin fan 3, and heat exchangers 4a, 4b, 5a, 5b, 6a, 6b and 7.

FIG. 2 is a plot of fin fan 3 efficiency data (as percent design U) vs time both before and after cleaning with organic solvents according to this invention.

FIG. 3 is a plot of heat exchanger 6a and 6b efficiency data (as percent design U) vs time both before and after cleaning with organic solvents according to this invention.

FIG. 4 is a plot of heat exchanger 5a and 5b efficiency data (as percent design U) vs time both before and after cleaning with organic solvents according to this invention.

FIG. 5 is a plot of heat exchanger 4a and 4b efficiency data (as percent design U) vs time both before and after cleaning with organic solvents according to this invention.

FIG. 6 is a plot of heat exchanger 7 efficiency data (as percent design U) vs time both before and after cleaning with organic solvents according to this invention.

FIG. 7 is shows an embodiment of this invention in which an organic solvent as described herein is used for cleaning a quench water separator drum 8.

L41 ANSWER 6 OF 11 IFIPAT COPYRIGHT 2006 IFI on STN

AN 10198409 IFIPAT;IFIUDB;IFICDB

TITLE: MOLDED PRODUCT FOR LIGHT-SENSITIVE MATERIAL,  
LIGHT-SENSITIVE MATERIAL PACKAGE AND PRODUCTION  
PROCESS THEREFOR; BLEND OF CELLULOSE, PAPER FIBER AND  
THERMOPLASTIC RESIN

INVENTOR(S): Mizuno; Kazunori, Kanagawa, JP  
Suzuki; Osamu, Kanagawa, JP  
Yamamoto; Taro, Kanagawa, JP

PATENT ASSIGNEE(S): FUJI PHOTO FILM CO., LTD.

AGENT: SUGHRUE MION, PLLC, 2100 PENNSYLVANIA AVENUE, N.W.,  
WASHINGTON, DC, 20037, US

NUMBER PK DATE

PATENT INFORMATION:	US 2002142114	A1	20021003
APPLICATION INFORMATION:	US 2002-53583		20020124

	NUMBER	DATE
PRIORITY APPLN. INFO.:	JP 2001-17106	20010125
FAMILY INFORMATION:	US 2002142114	20021003
DOCUMENT TYPE:	Utility	
	Patent Application - First Publication	
FILE SEGMENT:	CHEMICAL	
	APPLICATION	
OTHER SOURCE:	CA 137:286595	

NUMBER OF CLAIMS: 15 170 Figure(s).

#### DESCRIPTION OF FIGURES:

FIG. 1 is an exploded perspective view of a molded product for a light-sensitive material, which is one embodiment of the present invention.

FIG. 2 is a conceptual view of one example of the molded product for a light-sensitive material of the present invention.

FIG. 2 (A) is an exploded perspective view of a package, and FIG. 2 (B) and FIG. 2 (C) are perspective views of a cushioning material from different directions.

FIG. 3 is a perspective view of a molded product for a light sensitive material, which is one embodiment of the present invention, and which is a container wherein a body and a lid are integrally molded.

FIG. 4 is a cross section showing a stationary disc and a rotary disc of one example of a refiner that can be used in a fiberizing step of the process for producing a molded product for a light-sensitive material of the present invention.

FIG. 5 is a lateral cross section of the example of the refiner that can be used in a fiberizing step of the process for producing a molded product for a light-sensitive material of the present invention.

FIG. 6 shows one example of a breaking machine that is used in a rough breaking step of the process for producing a molded product for a light-sensitive material of the present invention.

FIG. 7 is a cross section at line I-I in FIG. 6. DETAILED DESCRIPTION OF THE INVENTION

The 'total of the thermoplastic resins' referred to in the present invention denotes the total of the polyolefin resin with which the waterproof paper for printing paper is laminated and all the thermoplastic resin that is added during a production process. In the case where a lining layer is provided, the 'total of the thermoplastic resins' includes a thermoplastic resin used for the lining layer.

Furthermore, the light-sensitive material package comprises a molded product for a light-sensitive material and a light sensitive material that is used together with the molded product. In the case where the molded product for a light sensitive material is a container, a light-sensitive material can be housed therein to give a light-sensitive material package.

The above-mentioned aspects of the invention have been accomplished as a result of an intensive investigation by the present inventors with the aim of minimizing the decomposition of cellulose by molding at as low a temperature as possible, searching for an additive for suppressing the decomposition of cellulose, and chemically neutralizing trace amounts of cellulose decomposition products.

The above-mentioned objects, other objects, features, and advantages of the invention will become clear from the following description.

Materials for the molded product for a light-sensitive material of the present invention and representative production steps therefor are explained in detail below.

With regard to the base paper that can be used in the molded product for a light-sensitive material and the light-sensitive material package of the present invention, **plant** cellulose fiber, which is generally sold as pulp, can be used. Examples of starting materials used for the pulp include softwoods such as pine, cedar, and Japanese cypress, hardwoods such as beech, oak, and eucalyptus, and non-wood fibers such as Edgeworthia chrysantha and bamboo.

In order to conserve forestry resources, much attention has been paid to the reuse of paper resources, and it is also possible to use **plant** cellulose fiber that has been regenerated as recycled pulp by steps such as fiberizing, coarse screening, aging, deinking, fine screening and bleaching using recovered paper collected from domestic, business, and public transport premises, including newspapers, weekly publications, magazines and advertising handouts, and refuse and broke from binding and printing factories.

In the present invention it is preferable to use, as base-paper-derived cellulose fiber, a base paper produced for printing paper and/or a waterproof paper for printing paper obtained by laminating the base paper with a polyolefin resin.

In the present invention, the 'base paper produced for printing paper' refers preferably to a base paper that can be broken into cellulose fibers having a weight-average fiber length in the range of 0.30 to 0.50 mm. With regard to such a base paper, a base paper made from kraft pulp, etc. can be cited, and it is often used for printing paper, but a base paper that is used for other purposes can also be included in the 'base paper produced for printing paper' of the present invention as long as the aforementioned requirement for fiber length is satisfied. The weight-average fiber length can be measured using an optical measurement device such as that described in the examples below. The weight-average fiber length changes little from the value measured immediately after breaking to that measured during the molded product production process. The 'base paper produced for printing paper' used in the present invention is preferably formed using hardwood bleached kraft pulp whose cellulose fibers, before the base paper is broken, have a weight-average fiber length in the range of 0.4 to 0.7 mm. A waterproof paper for printing paper obtained using the above-mentioned base paper is broken using a refiner, a pin mill etc. and the cellulose fibers thus obtained particularly preferably have a weight-average fiber length in the range of 0.30 to 0.50 mm as described above. When the weight-average fiber length of the cellulose fibers before breaking exceeds 0.7 mm, the kneadability with a resin tends to be degraded, and the kneading tends to require a high temperature of at least 250 degrees C. and a long duration. When the fiber length is less than 0.4 mm, although it becomes possible to knead at a comparatively low temperature less than approximately 220 degrees C. for a short time, the precision and strength of the paper resin molded product so obtained tend to be degraded. Use of a base paper employing cellulose fibers having a weightaverage fiber length in the range of 0.4 mm to 0.7 mm before breaking can give a paper resin molded product having high surface smoothness, high molding precision, and high molding strength.

The length of the cellulose fibers is preferably uniform. A uniform length for the cellulose fibers allows the kneading step and the molding step in the paper resin molded product production process to be carried out uniformly and robustly. Furthermore, the time required for these steps can be shortened, thereby preventing excessive thermal energy being applied and minimizing the adverse effects on the photographic properties from the paper resin molded product so obtained.

The 'base paper produced for printing paper' used in the present invention is preferably formed using a hardwood (laubholz) bleached kraft pulp (LBKP) as a starting material. A method for paper making using an LBKP is disclosed in JP-A-10-245791.

The pulp that forms the 'base paper produced for printing paper' used in the present invention preferably has (1) an average degree of polymerization of 800

or more, or gives (2) a pH on the base paper surface of 6.0 or more, or (3) an internal bond strength in the base paper of 10 to 20 N-cm, and it is particularly preferable for the above-mentioned requirements (1), (2) and (3) to be satisfied simultaneously.

Details of these characteristics are described in JP-A-3-149542 (Japanese Registered Patent No. 2671154).

With regard to an additive that can be used in the 'base paper produced for printing paper', it is preferable to use an additive that is prepared so that it does not adversely affect the photographic properties. That is to say, the additive that is used in the base paper is preferably an additive that does not adversely affect the raw stock storability of photographic light-sensitive materials, storage stability of developed prints, etc.

Such an additive includes a sizing agent (a rosin, a higher fatty acid salt, an alkylketene dimer, an alkenyl succinate, etc.), a paper strength increasing agent (polyacrylamide, etc.), a fixing agent (aluminum sulfate, etc.), a pH adjusting agent (sodium aluminate, sodium hydroxide, etc.), a filler (clay, talc, calcium carbonate, etc.), and other additives (a dye, a slime control agent, etc.).

A base paper formed by using an amphoteric polyacrylamide (JP-A59-31949) as a paper strength increasing agent is preferably used in the present invention. A particularly useful paper strength increasing agent is an amphoteric polyacrylamide having an average molecular weight of 2,500,000 to 5,000,000, the average molecular weight being measured by gel permeation chromatography. The amphoteric polyacrylamide is an amphoteric copolymer obtained by copolymerizing an anionic monomer and a cationic monomer using as the main monomer acrylamide or methacrylamide (JP-A-6-167767). The base paper is preferably a neutral paper that has been made in a neutral region in which the pH of the paper stock is in the range of 6.0 to 7.5. When the pH exceeds the above-mentioned range, the cellulose tends to be easily hydrolyzed. When the cellulose forming the base paper undergoes hydrolysis, its molecular weight (degree of polymerization) decreases, thereby degrading the strength of the base paper. The use of a base paper with a decreased molecular weight in the manufacture of paper resin pellets causes the problems that (1) the cellulose fibers easily undergo **thermal decomposition** during molding; (2) the Izod impact strength is degraded; (3) an acidic gas, etc. that adversely affects photographic properties is easily generated; and so on. It is therefore preferable for the base paper to be made in the neutral region so that the paper surface has a pH of 6.0 to 7.5.

#### DESCRIPTION OF FIGURES:

With regard to a polyolefin that is used for producing waterproof paper for printing paper in which a polyolefin resin is laminated on both sides of the above-mentioned base paper, a homopolymer of an alpha-olefin such as polyethylene and a copolymer of alpha-olefins are preferred. Examples thereof include high-density polyethylene (HDPE), low-density polyethylene (LDPE), and a mixture thereof.

The molecular weight of these polyolefins is not particularly limited as long as a white pigment or a fluorescent whitener can be included in the laminated layer formed by extrusion coating, but a polyolefin having a molecular weight in the range of 20,000 to 200,000 is usually used.

The thickness of the polyolefin resin laminated layer is preferably 15 to 50  $\mu$ m.

When the alpha-olefin homopolymer contains an additive, the additive is preferably one that does not adversely affect the raw stock storability of light-sensitive materials, the storage stability of developed prints, etc. It is particularly preferable to include a white pigment, a colored pigment, and an antioxidant in the polyolefin resin laminated layer on the side on which a photographic emulsion would be coated.

A typical layer structure of the waterproof paper for printing paper has, going from the front side on which the photographic emulsion would be coated to the opposite side; an LDPE layer containing titanium dioxide and zinc stearate, a

base paper layer, and a mixed LDPE and HDPE layer containing calcium stearate. Typical basis weights are 21 to 32 g/m<sup>2</sup> for the first LDPE layer, 135 to 167 g/m<sup>2</sup> for the base paper layer, and 23 to 24 g/m<sup>2</sup> for the second, mixed LDPE/HDPE layer.

The production of a paper resin in the present invention can employ a base paper produced for printing paper but preferably employs a waterproof paper for printing paper in which the above-mentioned base paper is laminated with a polyolefin resin.

With regard to an additional thermoplastic resin that can be used in the present invention, there can be cited as preferable examples thereof polyolefins such as polyethylene (PE) and polypropylene (PP); polyesters such as polyethylene terephthalate and polybutylene terephthalate; polyamides such as nylon-6, nylon-6,6, nylon-11 and nylon-12; polystyrene; polystyrene copolymers, etc. In particular, a poly- $\alpha$ -olefin such as PE or PP, which has compatibility with a polyolefin resin that has been laminated on the base paper, is preferably used as the additional thermoplastic resin. The 'additional thermoplastic resin' referred to here denotes a separate thermoplastic resin from the polyolefin resin that has been laminated on the base paper, and does not exclude a thermoplastic resin having the same composition as that of the polyolefin resin used for the base paper lamination. Use of an elastomer resin as a component of the thermoplastic resin can give an elastic molded product.

In the molded product and the package of the present invention, the mixing ratio by weight of the paper-derived cellulose fibers to the total of the thermoplastic resins is 51:49 to 75:25, and preferably 60:40 to 70:30.

When mixing an additional thermoplastic resin with a waterproof paper for printing paper in which 75 parts by weight of the base paper is laminated with 25 parts by weight of a polyolefin resin, in order to ensure that 51 wt % to 75 wt % of the molded product is formed from the base-paper-derived cellulose component, 47 to 0 parts by weight of the additional thermoplastic resin is added to 100 parts by weight of the waterproof paper for printing paper. The antioxidant that can be preferably used in the present invention is a hindered phenol antioxidant, and its melting point is preferably at least 100 degrees C., and particularly preferably at least 120 degrees C.

Representative examples of the hindered **phenols** that can be used in the present invention are listed below.

- 1) 1,3,5-Trimethyl-2,4,6-tris(3,5-di-tert-butyl-4-hydroxybenzyl) benzene,
- 2) tetrakis(methylene-3-(3',5'-di-tert-butyl-4'-hydroxyphenyl) propionate)methane,
- 3) octadecyl-3,5-di-tert-butyl-4-hydroxyhydrocinnamate,
- 4) 2,2',2''-tris((3,5-di-tert-butyl-4-hydroxyphenyl)propionyloxy) ethylisocyanurate,
- 5) 1,3,5-tris(4-tert-butyl-3-hydroxy-2,6-dimethylbenzyl) isocyanurate,
- 6) tetrakis(2,4-di-tert-butylphenyl) 4,4'-biphenylenediphosphite ester,
- 7) 4,4'-thiobis(6-tert-butyl-o-cresol),
- 8) tris(2-methyl-4-hydroxy-5-tert-butylphenyl)butane,
- 9) 2,2'-methylenebis(4-methyl-6-tert-butylphenol),
- 10) 4,4'-methylenebis(2,6-di-tert-butylphenol),
- 11) 4,4'-butylidenebis(3-methyl-6-tert-butylphenol),
- 12) 2,6-di-tert-butyl-4-methylphenol,
- 13) 4-hydroxymethyl-2,6-di-tert-butylphenol,
- 14) 2,6-di-tert-butyl-4-n-butylphenol,
- 15) 2,6-bis(2'-hydroxy-3'-tert-butyl-5'-methylbenzyl)-4-methylphenol,
- 16) 4,4'-methylenebis(6-tert-butyl-o-cresol),
- 17) 4,4'-butylidenebis(6-tert-butyl-m-cresol),
- 18) 3,9-bis(1,1-dimethyl-2-(beta-(3-t-butyl-4-hydroxy-5-methylphenyl)propionyloxy)ethyl)-2,4,8,10-tetraoxaspiro(5,5) undecane,
- 19) 1,1,3-tris(2-methyl-4-hydroxy-5-t-butylphenyl)butane,

The amount of hindered phenol antioxidant added is 0.001 to 1.0 wt % of the total of the paper and the thermoplastic resins, preferably 0.005 to 0.8 wt %,

more preferably 0.01 to 0.6 wt %, and most preferably 0.02 to 0.4 wt %. It is preferable to add thermoplastic resin pellets containing an antioxidant in a concentrated form by melt-kneading, and the pellets are added to a mixture of the paper and the thermoplastic resins before molding at the latest. To elaborate, a desired amount thereof is added as concentrated pellets to a material supply tank immediately before molding. Preferably, paper resin pellets, which will be described below, and concentrated antioxidant pellets are metered individually and supplied to a hopper installed in a molding machine, and the mixture is kneaded and then molded. The aldehyde-neutralizing agent used in the present invention is represented by general formula (I) below.  
General Formula (I)

# FIG-01

In the formula, R1, R2, and R3 denote divalent organic radicals and together form a cyclic imino compound via covalent bonds therebetween. It is surmised that, due to the high reactivity of the imino group, the active imino compound represented by general formula (I) reacts, as shown in reaction formula (II) below, with an aldehyde such as furfural that is generated as a result of the **thermal decomposition** of cellulose in the paper resin, to form a methylol group.  

$$R-NH-R'+HCHO \rightarrow R(CH_2OH)-R' \quad (II)$$
In order for the imino group to have such a reactivity, it is essential for it to have a sufficiently low electron density and be able to induce an electronic nucleophilic reaction. It is therefore necessary for the organic radicals that are directly chemically bonded to the imino group to be electrophilic. Such organic radicals bonded to the imino group, that is to say, organic radicals denoted by R1 and R2 in the above-mentioned general formula (I), are preferably -CO-, -COO-, -NH-, -NH2, a phenyl group, a biphenyl group, or a naphthalene group.  
The aldehyde-neutralizing agent of the present invention is preferably neither released from the molded product after the molten mixing with the paper resin nor the cause of **thermal decomposition**. Preferable examples of the compound represented by general formula (I) include hydantoins and imidazoles, and hydantoins are preferred in the present invention. As examples of the hydantoins, hydantoin, 5-isopropylhydantoin, 5,5-dimethylhydantoin, 5,5-diphenylhydantoin and allantoin can be cited, but they are not limited thereto.  
With regard to the antioxidant and the aldehyde-neutralizing agent that can be used in the present invention, compounds that are generally known as an 'antioxidant' or an 'aldehydeneutralizing agent' can be cited. Such antioxidants and neutralizing agents are described in, for example, Zenjiro Osawa ed. 'Degradation and Stabilization of Macromolecular Materials (Kobunshizairyo no Rekka to Anteika)' (May 1990, Published by CMC), Motonobu Minagawa ed. 'Plastic Additive Usage Notes (Plastic Tenkazai Katsuyo Note)' Jul. 5, 1996, Published by Kogyo Chosa Kai.  
A cyclic organic compound having an active imino group represented by general formula (I) is added at 0.05 to 3.0 % wt of the total of the paper and the thermoplastic resins, preferably 0.06 to 2.0 wt %, and particularly preferably 0.067 to 1.0 wt %.  
The method and the timing of the addition are the same as those in the case of the above-mentioned hindered phenol antioxidant.  
It is preferable to add an antioxidant and an aldehydeneutralizing agent in combination to the molded product of the present invention. The amounts thereof added are the same as in the case where they are used singly. The antioxidant

of the present invention is added at at least 0.05 wt % and, in addition, when 5,5-dimethylhydantoin is used as the aldehydeneutralizing agent, it is preferably added at at least 0.05 wt %.

The thickness of the molded product of the present invention is from 0.5 mm to 10 mm, preferably from 0.5 mm to 5 mm, and more preferably from 0.8 mm to 3 mm. FIGS. 1 to 3 show embodiments of the molded product for a lightsensitive material in accordance with the present invention.

FIG. 1 shows an instant film pack, which is one embodiment of the present invention. The instant film pack includes a case main body 1, a film cover 2, a light-shielding sheet 4, a lightshielding sheet 5, a base plate 6, and a flap 7. The abovementioned components 1 to 6 employ molded resin products, and the molded products of the present invention can be used for a part or the whole of these components. The components, together with a film 3, can be made into a light-sensitive material package.

#### DESCRIPTION OF FIGURES:

FIG. 2 shows cushioning materials and a package, which are embodiments of the present invention, that are used to store a long roll of light-sensitive material disclosed in JP-A-11327089. FIG. 2 (A) is an exploded perspective view of the package, and FIG. 2 (B) and FIG. 2 (C) are perspective views of the cushioning material from different directions. The cushioning material 14 has a thickness of 1.5 mm, and is a molded product of the present invention.

FIG. 3 is a perspective view showing a case main body and a lid for FUJICOLOR SUPERIA (registered trademark of Fuji Photo Film Co., Ltd.) 400, which is one embodiment of the present invention.

In FIG. 2, the outermost periphery of a roll of light-sensitive material 11 is covered with a light-shielding sheet so that the light-sensitive material is neither exposed to light nor damaged. A light-shielding protecting plate 12 is fixed to a paper tube 11a at each of the two ends of the roll of lightsensitive material 11 in its width direction so that the ends are neither exposed to light nor damaged. When inserting the roll of light-sensitive material 11 into a housing container 13, it is necessary to take care that the roll of light-sensitive material is not deformed or broken due to a physical shock such as a fall and that the roll of light-sensitive material is not exposed to light as a result of breakage of the light-shielding sheet or the protecting plate 12. The roll of light-sensitive material 11 is therefore inserted into the housing container 13 while supporting opposite ends of the paper tube 11a of the roll of light-sensitive material 11 by means of a pair of cushioning materials 14.

The cushioning material 14 is formed from a square substrate 14a made of a synthetic resin, a side wall 14b formed integrally on the outer periphery of the substrate 14a, a large number of reinforcing ribs 14c and 14d formed on both sides of the substrate 14a in radial directions and in directions that are orthogonal thereto, a cylindrical part 14e formed integrally on the central area of the substrate 14a and having its forward end closed, and projections 14f provided on the four corners of the substrate 14a so as to extend orthogonally therefrom. Inserting the cylindrical part 14e of the cushioning material 14 into the paper tube 11a supports the roll of light-sensitive material 11.

The molded product for a light-sensitive material of the present invention can be produced by various methods. The molded product for a light-sensitive material of the present invention is characterized in that a thermoplastic resin and a waterproof paper for printing paper, in which a base paper preferably produced for printing paper is laminated with a polyolefin, are used as starting materials, and it is molded so that the component ratio by weight of the base-paper-derived cellulose fibers and the total of the thermoplastic resins is in the range of 51:49 to 75:25 in the molded product for a lightsensitive material that is finally obtained. The 'total of the thermoplastic resins' referred to here denotes the total of the polyolefin resin that is laminated on the waterproof paper for printing paper and all of the thermoplastic resins that are added during the production process. Setting



the lower limit of the proportion of the cellulose fiber component at 51 wt % ensures that the cellulose fibers are present at more than 50 wt % of the whole product.

With regard to the timing of the first addition of a thermoplastic resin, a choice can be made as to whether or not a mixture of cellulose fibers and a polyolefin resin, obtained by breaking the waterproof paper for printing paper, is by itself temporarily made into pellets. An example of the process for producing a molded product without forming the abovementioned pellets is illustrated below:

1) A step in which a waterproof paper for printing paper, in which a base paper produced for printing paper is laminated with a polyolefin resin, is broken to give a mixture of cellulose fibers and the polyolefin resin; 2) a step in which an additional thermoplastic resin, which may be molten, is added if necessary to the mixture obtained above; and 3) a step in which a molded product for a light-sensitive material containing the base paper and the polyolefin resin is molded so that the component ratio by weight of the base-paper-derived cellulose fibers to the total of the thermoplastic resins is in the range of 51:49 to 75:25.

An example of the process for producing a molded product involving making a mixture of cellulose fibers and a polyolefin resin, which is obtained by breaking the waterproof paper for printing paper, into pellets is illustrated below:

1) A step in which a waterproof paper for printing paper, in which a base paper produced for printing paper is laminated with a polyolefin resin, is broken to give a mixture of cellulose fibers and the polyolefin resin; 2) a step in which the mixture so obtained is by itself temporarily made into pellets, the pellets so obtained are re-broken, and the broken cellulose fibers and polyolefin resin are kneaded with an additional thermoplastic resin at the same time as the rebreaking or separately; and 3) a step in which a molded product for a light-sensitive material containing the base paper and the polyolefin resin is molded so that the component ratio by weight of the base-paper-derived cellulose fibers to the total of the polyolefin resin and the additional thermoplastic resin is in the range of 51:49 to 75:25. This process is preferable since the compatibility of the cellulose fibers with the additional thermoplastic resin can be improved.

The above-mentioned steps can be carried out in a continuous sequence or the mixture, etc. obtained in each of the steps can be stored temporarily. The antioxidant and the aldehyde-neutralizing agent of the present invention are preferably added in the above-mentioned step 3).

A more detailed example of the process for producing a molded product for a light-sensitive material of the present invention is as follows.

Hereinafter, this production process example is called the 'detailed production process example'. In the examples explained below, this 'detailed production process example' will be referred to.

(1) A waterproof paper for printing paper, in which a base paper produced for printing paper is laminated with a polyolefin resin, is roughly broken using a shearing machine. As one embodiment, it is cut into 30 x 30 mm square pieces.

(2) The waterproof paper roughly broken in this way is fiberized into cellulose fibers in a torn flock form by the beating action of pins using a pin mill or a breaking action under friction using a refiner.

(3) The bulky flock-form mixture of the cellulose fibers and the polyolefin resin is compression-kneaded using a pellet mill to give compact pellets.

(4) The pellets obtained in the above-mentioned step are subsequently broken using a turbo mill.

(5) An additional thermoplastic resin powder is added to the mixture of cellulose fibers and polyolefin resin so broken, and they are again kneaded to form pellets using a pellet mill.

(6) The pellets containing the cellulose fibers, the polyolefin resin, and the additional thermoplastic resin obtained in the above-mentioned step are kneaded using an extruder to give paper resin pellets.

(7) The paper resin pellets thus obtained, concentrated antioxidant pellets, and concentrated aldehyde-neutralizing pellets are supplied to an injection-molding machine and injection-molded into the desired form. The above-mentioned steps can be modified in a variety of ways. For example, in the above-mentioned breaking step (4) the pellets obtained in step (3) and lumps of an additional thermoplastic resin may be broken together to give a mixture. This mixture can be supplied to the pellet mill in step (5). It is surmised that, since the molded product for a lightsensitive material of the present invention uses a waterproof paper for printing paper as a starting material, the broken polyolefin resin and the broken cellulose fibers are uniformly mixed in step (2), which employs a pin mill or a refiner. It is therefore possible to achieve good mixing of the cellulose fibers, the polyolefin resin, and an additional thermoplastic resin with each other during the subsequent steps (3) to (5).

It is also possible to prepare the pellets in step (6) using an amount of thermoplastic resin that is smaller than the final amount that is to be added, and the remainder of the thermoplastic resin is added in order to mold a lining layer, etc. when injection-molding the molten pellets. The number of steps in which the thermoplastic resin is added and the amount thereof added can be chosen freely as long as the injection molding is carried out so that the component ratio by weight of the base paper to the total of the thermoplastic resins in the molded product is in the range of 51:49 to 75:25. The remainder of the thermoplastic resin can also be used for molding a lining layer by two-color molding or insert molding.

When the proportion of the base paper component exceeds 75 wt %, the injection pressure rapidly increases, thereby making it impossible to carry out injection molding in a stable manner. This upper limit is much higher in the case where a waterproof paper for printing paper is used than is the case where cellulose fibers from recycled newspaper, etc. are used by themselves as a starting material.

In the kneading operation in step (5) of the above-mentioned detailed production process example, the moisture content of the cellulose fibers that are kneaded with the thermoplastic resin is preferably 5 wt % to 40 wt %, and more preferably 10 wt % to 20 wt %. Maintaining this moisture content can fully utilize the resin-reinforcing function of the cellulose fibers.

#### DESCRIPTION OF FIGURES:

A refiner that can be used in the fiberizing step (2) of the above-mentioned detailed production process example is explained below.

FIG. 4 shows cross sections of a stationary disc and a rotary disc of one example of the refiner. FIG. 5 is a lateral cross section of one example of the refiner.

This step is a step for fiberizing the cellulose fibers of the paper to break them into the flock-form cellulose fibers.

The refiner comprises a stationary disc 23 and a rotary disc 24. As shown in FIG. 4, the stationary disc 23 has stationary projections 25 arranged in a line on coaxial circles A on one side of the disc and the rotary disc 24 has moving projections 26 arranged on coaxial circles B on one side of the disc, the coaxial circles B being positioned between the coaxial circles A. As shown in FIG. 5, the above-mentioned stationary disc 23 and rotary disc 24 are made to face each other so that the stationary projections 25 and the moving projections 26 mesh with each other.

In this state, rotating the rotary disc 24 around its central axis abrades WP paper (or recycled paper), etc. between the stationary projections 25 and the moving projections 26, thereby breaking the paper.

In FIG. 5, 28 denotes a case and 27 denotes a mesh drum. Since the WP paper (or recycled paper) is broken by abrading it between the stationary projections 25 and the moving projections 26, the WP paper (or recycled paper) is kneaded and disentangled between the stationary projections 25 and the moving projections 26, thereby achieving sufficient fiberization while suppressing cutting of the fiber.

A turbo mill that can be used in step (4) of the detailed production process example is explained below.

FIG. 6 is a vertical longitudinal cross section of a turbo mill. FIG. 7 is a magnified cross section at line I-I in FIG. 6, which shows the shape of a blade 31 having a triangular cross section and a rotor 32.

1) In the turbo mill as shown in FIG. 7, the inner face of the cylindrical blade 31 is provided with a large number of grooves 33 having a triangular cross section, and the cylindrical surface of the rotor 32 is provided with ridges 34.

2) The large number of ridges 34 of the rotor 32 rotating at high speed cause a flow of air around the outer circumference of the rotor 32, the air flow having a high flow rate in the rotational direction of the rotor 32. This air flow is compressed when the tips of the ridges 34 of the rotor 32 approach the grooves 33 provided on the inside of the blade 31, and the air flow is expanded when the tips of the ridges 34 depart from the grooves 33, thereby causing high frequency pressure vibrations.

3) In FIG. 6, pellets that are supplied through an inlet (not illustrated) are broken finely by the above-mentioned pressure vibrations.

4) The pellets that have been finely broken by the turbo mill are collected together with the air by a cyclone bag filter.

5) Controlling the number of turbo mill treatments can achieve a desired fiber length.

A known kneading machine such as a pressure type kneader can be used for kneading.

Other preferable conditions for the kneading step are described in JP-A-5-50427.

The kneading temperature is preferably from 90 degrees C. to 220 degrees C., and particularly preferably from 140 degrees C. to 170 degrees C. When the kneading temperature is less than 90 degrees C., the kneading tends to be insufficient. This tendency can be observed to some extent until the temperature reaches 140 degrees C. When the kneading temperature exceeds 220 degrees C., since the cellulose easily decomposes, a large amount of components that will adversely affect the light-sensitive material are generated.

The light-sensitive material package comprises a molded product for a light-sensitive material obtained by any one of the abovementioned processes and a light-sensitive material that is used with the molded product. In the case where the molded product for a light-sensitive material is a container, a light-sensitive material can be housed therein to give a light-sensitive package. In order to impart light-shielding performance to a paper resin, the addition of 0.05 to 25 wt % of a light-shielding material thereto can improve the light-shielding function that is required for a molded product used on the periphery of a photographic light-sensitive material without degrading the chemical and physical properties of the paper resin. When the amount is less than 0.05 wt %, light-shielding performance cannot be exhibited, which not only fails to achieve the object of the addition but also increases the cost. When the amount exceeds 25 wt %, the physical strength is degraded and at the same time the appearance becomes poor.

Examples of the light-shielding material that can be added in order to introduce light-shielding performance are as follows:

(1) Inorganic compounds

A. Oxides

Silica, diatomaceous earth, alumina, titanium oxide, iron oxide, zinc oxide, magnesium oxide, antimony oxide, barium ferrite, strontium ferrite, beryllium oxide, pumicite, pumicite balloons, alumina fibers, etc.

B. Carbonates

Calcium carbonate, magnesium carbonate, dolomite, dawsonite, etc.

C. Silicates

Talc, clay, mica, asbestos, glass fiber, glass balloons, glass beads, calcium silicate, montmorillonite, bentonite, etc.

D. Carbon

Carbon black, graphite, carbon fiber, hollow carbon spheres, etc.

#### E. Others

Iron powder, copper powder, lead powder, tin powder, stainless steel powder, pearl pigment, aluminum powder, molybdenum sulfide, boron fiber, silicon carbide fiber, yellow copper fiber, potassium titanate, lead titanate zirconate, zinc borate, barium metaborate, calcium borate, sodium borate, aluminum paste, etc.

#### (2) Organic compounds

Wood powder (pine, oak, sawdust, etc.), husk fiber (almond, peanut, chaff, etc.), various types of colored fiber such as cotton and jute, paper pieces, cellophane pieces, nylon fiber, polypropylene fiber, starch, aromatic polyamide fiber, etc.

There are various modes for preparing a light-shielding material, but a concentrated master batch method is preferable in terms of cost, prevention of contamination of the workplace, etc. JPB-40-26196 (JP-B denotes Japanese examined patent application publication) discloses a method for preparing a polymer-carbon black master batch by dispersing carbon black in a solution of a polymer dissolved in an organic solvent, and JP-B-43-10362 discloses a method for preparing a concentrated master batch by dispersing carbon black in polyethylene. Pellets obtained by mixing a thermoplastic resin with 10 wt % of carbon black in a concentrated manner can be used. A desired light-shielding performance can be obtained by adding carbon black at about 0.5 wt % to the molded product of the present invention.

With regard to the carbon black that is used in the molded product for a light-sensitive material of the present invention, carbon black having a pH of 6.0 to 9.0 and an average particle size of 10 to 120  $\mu\text{m}$  is preferred since fog is not caused in a light-sensitive material, changes in light sensitivity are suppressed, the light-shielding ability is high, and the occurrence of pinholes due to the formation of lumps of carbon black and fisheyes is suppressed even when it is added to the resin composition in the present invention. In particular, furnace carbon black having a volatile component content of 2.0% or less and an oil adsorption of 50 ml/100 g or more is preferred. Channel carbon black is expensive and tends to cause undesirable fog in a light-sensitive material. When its use is required, it should be chosen after examining its influence on the photographic properties.

Examples of preferable commercial products include Carbon black #20(B), #30(B), #33(B), #40(B), #44(B), #45(B), #50, #55, #100, #600, #2200(B), #2400, #950(B), MA8, MA11 and MA100 (all manufactured by Mitsubishi Chemical Corp.).

As examples of commercial products available outside Japan, Black Pearls 2, 46, 70, 71, 74, 80, 81, 607, etc., Regal 300, 330, 400, 660, 991, SRF-S, etc.

Vulcan 3, 6, etc., and Sterling 10, SO, V, S, FT-FF, MT-FF, etc. (all manufactured by Cabot) can be cited. Furthermore, Printex-Alfa and Printex-90 (all manufactured by Degussa-Huls) can be cited. However, they are not limited thereto.

The amount of light-shielding material added is usually 0.05 to 25 wt % relative to the weight of the final molded product, preferably 0.1 to 15 wt %, more preferably 0.5 to 10 wt %, and most preferably 1.0 to 7.0 wt %.

Since the paper resin in the present invention has a low melt flow rate (MFR), a lubricant can be added as long as the effect of the present invention is not degraded.

The names of typical lubricants that can be used in the molded product of the present invention and their manufacturers' names are listed below.

#### (1) Silicone type lubricants

Various grades of dimethylpolysiloxane and modified compounds thereof

(Shin-etsu Silicone Co., Ltd., Toray Silicone, Inc.)

#### (2) Oleamide type lubricants

Armoslip CP (Lion Akzo), Neutron (Nippon Fine Chemical Co., Ltd.), Neutron E-18 (Nippon Fine Chemical Co., Ltd.), Amido O (Nitto Chemical Industry Co., Ltd.), Alfro E:10 (NOF Corp.), Diamid O200 (Nippon Kasei Chemical Co., Ltd.), Diamid C-200 (Nippon Kasei Chemical Co., Ltd.), etc.

(3) Erucamide type lubricants

Alfro-F-10 (NOF Corp.), etc.

(4) Stearamide type lubricants

Alfro-S-10 (NOF Corp.), Neutron 2 (Nippon Fine Chemical Co., Ltd. ), Diamid 200 (Nippon Kasei Chemical Co., Ltd.), etc.

(5) Bisfatty acid amide type lubricants

Bisamide (Nippon Kasei Chemical Co., Ltd.), Diamid 200 Bis (Nippon Kasei Chemical Co., Ltd.), Armowax BBS (Lion Akzo), etc.

(6) Nonionic surfactant type lubricants

Electrostripper TS-2, Electrostripper-TS-3 (Kao Corp.), etc.

(7) Hydrocarbon type lubricants

Liquid paraffin, natural paraffin, microwax, synthetic paraffin, polyethylene wax, polypropylene wax, chlorinated hydrocarbons, fluorocarbons.

DESCRIPTION OF FIGURES:

(8) Fatty acid type lubricants

Higher fatty acids (preferably those having 12 carbons or more), oxyfatty acids.

(9) Ester type lubricants

Lower alcohol esters of fatty acids, polyhydric alcohol esters of fatty acids, polyglycol esters of fatty acids, fatty alcohol esters of fatty acids

(10) Alcohol type lubricants

Polyhydric alcohols, polyglycols, polyglycerols.

(11) Metallic soaps

Compounds of a higher fatty acid such as lauric acid, stearic acid, ricinoleic acid, naphthenic acid or oleic acid and a metal such as Li, Mg, Ca, Sr, Ba, Zn, Cd, Al, Sn or Pb.

Preferred embodiments of the molding method of the present invention are listed below.

1) Relationship between the photographic properties and the cylinder temperature when molding

When using paper resin pellets in the present invention, there is a tendency for the cellulose component forming the paper resin pellets to undergo

\*\*\*thermal\*\*\* **decomposition** when molding, thereby causing

degradation in the photographic properties, and it is therefore preferable for the molding temperature to be as low as possible. From the results of examining the relationship between the cylinder temperature and the photographic properties, it is desirable for the cylinder temperature to be 180 degrees C. or less, preferably 170 degrees C. or less, and more preferably in the range of 150 degrees C. to 170 degrees C.

2) Relationship between the moldability and the MFR of a resin that is added to the paper resin pellets

Since the paper resin pellets produced from a WP paper have a comparatively long fiber length, the moldability is poor. When the flowability of the resin that is added thereto is poor, short shot molded products are formed. As a result of an investigation by the present inventors, taking the extent of sink marks in the molded product (indentations in the molded product) into consideration, the MFR of the resin that is added is preferably at least 15 g/10 min., more preferably at least 30 g/10 min., and most preferably 45 to 80 g/10 min.

With regard to the molded products for light-sensitive materials of the present invention, there are, for example, a moistureproof container and its associated member for photographic color paper and, in particular, a moisture-proof container and its component member housing a light-shielding container (cartridge) for photographic film, an instant film pack shown in FIG. 3 (0.9 mm thick black container for instax mini (registered trade name) card size instant film by Fuji Photo Film Co., Ltd.), and a moisture-proof container (including a cover) shown in FIG. 3 for a 135 format film cartridge. In addition, the molded product of the present invention can be used as a 135 format spool, a cartridge for an APS format film, a 110 format film cartridge, a cuboid-shaped cartridge housing a light-sensitive material for printing, a paper tube around which a

long length of light-sensitive material is wound, a flange for winding up a long length of light-sensitive material and retaining the opposite sides thereof, a cushioning material that is placed in a container for a light-sensitive material, supporting board for a light-sensitive material laminate (a package or a part thereof that is in contact with a light-sensitive material laminate), a film container equipped with a lens (registered trademark 'Utsurundesu' of Fuji Photo Film, Co., Ltd.), etc.

The molded product of the present invention does not degrade the photographic properties and has excellent mechanical properties. Furthermore, the proportion of cellulose fibers in the molded product exceeds 50 wt %, and the product can therefore be disposed of with a lower burden on the environment. Refuse from uncoated printing paper generated in the process for the production of printing paper, etc. can be effectively recycled to give a light-sensitive material package or a functional component.

Molding at a cylinder temperature of as low as about 170 degrees C. using an antioxidant and an aldehyde-neutralizing agent can give a container having a good storage performance so that it does not degrade the photographic properties of a light-sensitive material that is housed therein. !

AB A molded product for a light-sensitive material has a component ratio by weight of paper-derived cellulose fibers to the total of thermoplastic resins in the range of 51:49 to 75:25 and includes at least one antioxidant, and at least one aldehyde-neutralizing agent. A light-sensitive material package is formed from the molded product and a light-sensitive material that is used with the molded product. Furthermore, a process for producing the molded product includes mixing a thermoplastic resin having a melt flow rate of at least 15 g/10 min. with pellets formed by breaking, compressing and granulating a base paper produced for printing paper, so that the component proportions are 51 to 75 parts by weight of paper-derived cellulose fibers and 49 to 25 parts by weight of the total of the thermoplastic resins, and then molding the mixture at a cylinder temperature of 180 degrees C. or less.

CLMN 15 170 Figure(s).

FIG. 1 is an exploded perspective view of a molded product for a light-sensitive material, which is one embodiment of the present invention.

FIG. 2 is a conceptual view of one example of the molded product for a light-sensitive material of the present invention.

FIG. 2 (A) is an exploded perspective view of a package, and FIG. 2 (B) and FIG. 2 (C) are perspective views of a cushioning material from different directions.

FIG. 3 is a perspective view of a molded product for a light-sensitive material, which is one embodiment of the present invention, and which is a container wherein a body and a lid are integrally molded.

FIG. 4 is a cross section showing a stationary disc and a rotary disc of one example of a refiner that can be used in a fiberizing step of the process for producing a molded product for a light-sensitive material of the present invention.

FIG. 5 is a lateral cross section of the example of the refiner that can be used in a fiberizing step of the process for producing a molded product for a light-sensitive material of the present invention.

FIG. 6 shows one example of a breaking machine that is used in a rough breaking step of the process for producing a molded product for a light-sensitive material of the present invention.

FIG. 7 is a cross section at line I-I in FIG. 6. DETAILED DESCRIPTION OF THE INVENTION

The 'total of the thermoplastic resins' referred to in the present invention denotes the total of the polyolefin resin with which the waterproof paper for printing paper is laminated and all the thermoplastic resin that is added during a production process. In the case where a lining layer is provided, the 'total of the thermoplastic

resins' includes a thermoplastic resin used for the lining layer. Furthermore, the light-sensitive material package comprises a molded product for a light-sensitive material and a light-sensitive material that is used together with the molded product. In the case where the molded product for a light-sensitive material is a container, a light-sensitive material can be housed therein to give a light-sensitive material package.

The above-mentioned aspects of the invention have been accomplished as a result of an intensive investigation by the present inventors with the aim of minimizing the decomposition of cellulose by molding at as low a temperature as possible, searching for an additive for suppressing the decomposition of cellulose, and chemically neutralizing trace amounts of cellulose decomposition products.

The above-mentioned objects, other objects, features, and advantages of the invention will become clear from the following description.

Materials for the molded product for a light-sensitive material of the present invention and representative production steps therefor are explained in detail below.

With regard to the base paper that can be used in the molded product for a light-sensitive material and the light-sensitive material package of the present invention, **plant** cellulose fiber, which is generally sold as pulp, can be used. Examples of starting materials used for the pulp include softwoods such as pine, cedar, and Japanese cypress, hardwoods such as beech, oak, and eucalyptus, and non-wood fibers such as *Edgeworthia chrysantha* and bamboo.

In order to conserve forestry resources, much attention has been paid to the reuse of paper resources, and it is also possible to use **plant** cellulose fiber that has been regenerated as recycled pulp by steps such as fiberizing, coarse screening, aging, deinking, fine screening and bleaching using recovered paper collected from domestic, business, and public transport premises, including newspapers, weekly publications, magazines and advertising handouts, and refuse and broke from binding and printing factories.

In the present invention it is preferable to use, as base-paper-derived cellulose fiber, a base paper produced for printing paper and/or a waterproof paper for printing paper obtained by laminating the base paper with a polyolefin resin.

In the present invention, the 'base paper produced for printing paper' refers preferably to a base paper that can be broken into cellulose fibers having a weight-average fiber length in the range of 0.30 to 0.50 mm. With regard to such a base paper, a base paper made from kraft pulp, etc. can be cited, and it is often used for printing paper, but a base paper that is used for other purposes can also be included in the 'base paper produced for printing paper' of the present invention as long as the aforementioned requirement for fiber length is satisfied. The weight-average fiber length can be measured using an optical measurement device such as that described in the examples below. The weight-average fiber length changes little from the value measured immediately after breaking to that measured during the molded product production process. The 'base paper produced for printing paper' used in the present invention is preferably formed using hardwood bleached kraft pulp whose cellulose fibers, before the base paper is broken, have a weight-average fiber length in the range of 0.4 to 0.7 mm. A waterproof paper for printing paper obtained using the above-mentioned base paper is broken using a refiner, a pin mill etc. and the cellulose fibers thus obtained particularly preferably have a weight-average fiber length in the range of 0.30 to 0.50 mm as described above. When the weight-average fiber length of the cellulose fibers before breaking exceeds 0.7 mm, the kneadability with a resin tends to be degraded, and the kneading tends to require a high temperature of at least 250 degrees C. and a long



duration. When the fiber length is less than 0.4 mm, although it becomes possible to knead at a comparatively low temperature less than approximately 220 degrees C. for a short time, the precision and strength of the paper resin molded product so obtained tend to be degraded. Use of a base paper employing cellulose fibers having a weightaverage fiber length in the range of 0.4 mm to 0.7 mm before breaking can give a paper resin molded product having high surface smoothness, high molding precision, and high molding strength.

The length of the cellulose fibers is preferably uniform. A uniform length for the cellulose fibers allows the kneading step and the molding step in the paper resin molded product production process to be carried out uniformly and robustly. Furthermore, the time required for these steps can be shortened, thereby preventing excessive thermal energy being applied and minimizing the adverse effects on the photographic properties from the paper resin molded product so obtained.

The 'base paper produced for printing paper' used in the present invention is preferably formed using a hardwood (laubholz) bleached kraft pulp (LBKP) as a starting material. A method for paper making using an LBKP is disclosed in JP-A-10-245791.

The pulp that forms the 'base paper produced for printing paper' used in the present invention preferably has (1) an average degree of polymerization of 800 or more, or gives (2) a pH on the base paper surface of 6.0 or more, or (3) an internal bond strength in the base paper of 10 to 20 N-cm, and it is particularly preferable for the above-mentioned requirements (1), (2) and (3) to be satisfied simultaneously.

Details of these characteristics are described in JP-A-3-149542 (Japanese Registered Patent No. 2671154).

With regard to an additive that can be used in the 'base paper produced for printing paper', it is preferable to use an additive that is prepared so that it does not adversely affect the photographic properties. That is to say, the additive that is used in the base paper is preferably an additive that does not adversely affect the raw stock storability of photographic light-sensitive materials, storage stability of developed prints, etc.

Such an additive includes a sizing agent (a rosin, a higher fatty acid salt, an alkylketene dimer, an alkenyl succinate, etc.), a paper strength increasing agent (polyacrylamide, etc.), a fixing agent (aluminum sulfate, etc.), a pH adjusting agent (sodium aluminate, sodium hydroxide, etc.), a filler (clay, talc, calcium carbonate, etc.), and other additives (a dye, a slime control agent, etc.).

A base paper formed by using an amphoteric polyacrylamide (JP-A59-31949) as a paper strength increasing agent is preferably used in the present invention. A particularly useful paper strength increasing agent is an amphoteric polyacrylamide having an average molecular weight of 2,500,000 to 5,000,000, the average molecular weight being measured by gel permeation chromatography. The amphoteric polyacrylamide is an amphoteric copolymer obtained by copolymerizing an anionic monomer and a cationic monomer using as the main monomer acrylamide or methacrylamide (JP-A-6-167767). The base paper is preferably a neutral paper that has been made in a neutral region in which the pH of the paper stock is in the range of 6.0 to 7.5. When the pH exceeds the above-mentioned range, the cellulose tends to be easily hydrolyzed. When the cellulose forming the base paper undergoes hydrolysis, its molecular weight (degree of polymerization) decreases, thereby degrading the strength of the base paper. The use of a base paper with a decreased molecular weight in the manufacture of paper resin pellets causes the problems that (1) the cellulose fibers easily undergo **thermal decomposition** during molding; (2) the Izod impact strength is degraded; (3) an acidic gas, etc. that adversely affects photographic properties is easily



generated; and so on. It is therefore preferable for the base paper to be made in the neutral region so that the paper surface has a pH of 6.0 to 7.5.

With regard to a polyolefin that is used for producing waterproof paper for printing paper in which a polyolefin resin is laminated on both sides of the above-mentioned base paper, a homopolymer of an alpha-olefin such as polyethylene and a copolymer of alpha-olefins are preferred. Examples thereof include high-density polyethylene (HDPE), low-density polyethylene (LDPE), and a mixture thereof.

The molecular weight of these polyolefins is not particularly limited as long as a white pigment or a fluorescent whitener can be included in the laminated layer formed by extrusion coating, but a polyolefin having a molecular weight in the range of 20,000 to 200,000 is usually used.

The thickness of the polyolefin resin laminated layer is preferably 15 to 50  $\mu$ m.

When the alpha-olefin homopolymer contains an additive, the additive is preferably one that does not adversely affect the raw stock storability of light-sensitive materials, the storage stability of developed prints, etc. It is particularly preferable to include a white pigment, a colored pigment, and an antioxidant in the polyolefin resin laminated layer on the side on which a photographic emulsion would be coated.

A typical layer structure of the waterproof paper for printing paper has, going from the front side on which the photographic emulsion would be coated to the opposite side; an LDPE layer containing titanium dioxide and zinc stearate, a base paper layer, and a mixed LDPE and HDPE layer containing calcium stearate. Typical basis weights are 21 to 32 g/m<sup>2</sup> for the first LDPE layer, 135 to 167 g/m<sup>2</sup> for the base paper layer, and 23 to 24 g/m<sup>2</sup> for the second, mixed LDPE/HDPE layer.

The production of a paper resin in the present invention can employ a base paper produced for printing paper but preferably employs a waterproof paper for printing paper in which the above-mentioned base paper is laminated with a polyolefin resin.

With regard to an additional thermoplastic resin that can be used in the present invention, there can be cited as preferable examples thereof polyolefins such as polyethylene (PE) and polypropylene (PP); polyesters such as polyethylene terephthalate and polybutylene terephthalate; polyamides such as nylon-6, nylon-6,6, nylon-11 and nylon-12; polystyrene; polystyrene copolymers, etc. In particular, a poly-alphaolefin such as PE or PP, which has compatibility with a polyolefin resin that has been laminated on the base paper, is preferably used as the additional thermoplastic resin. The 'additional thermoplastic resin' referred to here denotes a separate thermoplastic resin from the polyolefin resin that has been laminated on the base paper, and does not exclude a thermoplastic resin having the same composition as that of the polyolefin resin used for the base paper lamination.

Use of an elastomer resin as a component of the thermoplastic resin can give an elastic molded product.

In the molded product and the package of the present invention, the mixing ratio by weight of the paper-derived cellulose fibers to the total of the thermoplastic resins is 51:49 to 75:25, and preferably 60:40 to 70:30.

When mixing an additional thermoplastic resin with a waterproof paper for printing paper in which 75 parts by weight of the base paper is laminated with 25 parts by weight of a polyolefin resin, in order to ensure that 51 wt % to 75 wt % of the molded product is formed from the base-paper-derived cellulose component, 47 to 0 parts by weight of the additional thermoplastic resin is added to 100 parts by weight of the waterproof paper for printing paper.

The antioxidant that can be preferably used in the present invention is a hindered phenol antioxidant, and its melting point is preferably at least 100 degrees C., and particularly preferably at least 120 degrees C.

Representative examples of the hindered **phenols** that can be used in the present invention are listed below.

- 1) 1,3,5-Trimethyl-2,4,6-tris(3,5-di-tert-butyl-4-hydroxybenzyl) benzene,
- 2) tetrakis(methylene-3-(3',5'-di-tert-butyl-4'-hydroxyphenyl) propionate)methane,
- 3) octadecyl-3,5-di-tert-butyl-4-hydroxyhydrocinnamate,
- 4) 2,2',2''-tris((3,5-di-tert-butyl-4-hydroxyphenyl)propionyloxy) ethylisocyanurate,
- 5) 1,3,5-tris(4-tert-butyl-3-hydroxy-2,6-dimethylbenzyl) isocyanurate,
- 6) tetrakis(2,4-di-tert-butylphenyl) 4,4'-biphenylenediphosphite ester,
- 7) 4,4'-thiobis(6-tert-butyl-o-cresol),
- 8) tris(2-methyl-4-hydroxy-5-tert-butylphenyl)butane,
- 9) 2,2'-methylenebis(4-methyl-6-tert-butylphenol),
- 10) 4,4'-methylenebis(2,6-di-tert-butylphenol),
- 11) 4,4'-butylidenebis(3-methyl-6-tert-butylphenol),
- 12) 2,6-di-tert-butyl-4-methylphenol,
- 13) 4-hydroxymethyl-2,6-di-tert-butylphenol,
- 14) 2,6-di-tert-butyl-4-n-butylphenol,
- 15) 2,6-bis(2'-hydroxy-3'-tert-butyl-5'-methylbenzyl)-4methylphenol,
- 16) 4,4'-methylenebis(6-tert-butyl-o-cresol),
- 17) 4,4'-butylidenebis(6-tert-butyl-m-cresol),
- 18) 3,9-bis(1,1-dimethyl-2-(beta-(3-t-butyl-4-hydroxy-5methylphenyl)propionyloxy)ethyl)-2,4,8,10-tetraoxaspiro(5,5) undecane,
- 19) 1,1,3-tris(2-methyl-4-hydroxy-5-t-butylphenyl)butane,

The amount of hindered phenol antioxidant added is 0.001 to 1.0 wt % of the total of the paper and the thermoplastic resins, preferably 0.005 to 0.8 wt %, more preferably 0.01 to 0.6 wt %, and most preferably 0.02 to 0.4 wt %.

It is preferable to add thermoplastic resin pellets containing an antioxidant in a concentrated form by melt-kneading, and the pellets are added to a mixture of the paper and the thermoplastic resins before molding at the latest. To elaborate, a desired amount thereof is added as concentrated pellets to a material supply tank immediately before molding. Preferably, paper resin pellets, which will be described below, and concentrated antioxidant pellets are metered individually and supplied to a hopper installed in a molding machine, and the mixture is kneaded and then molded.

The aldehyde-neutralizing agent used in the present invention is represented by general formula (I) below.

General Formula (I)

# FIG-01

In the formula, R1, R2, and R3 denote divalent organic radicals and together form a cyclic imino compound via covalent bonds therebetween. It is surmised that, due to the high reactivity of the imino group, the active imino compound represented by general formula (I) reacts, as shown in reaction formula (II) below, with an aldehyde such as furfural that is generated as a result of the **thermal decomposition** of cellulose in the paper resin, to form a methylol group.

$R-NH-R' + HCHO \rightarrow R(CH_2OH)-R'$  (II)

In order for the imino group to have such a reactivity, it is essential for it to have a sufficiently low electron density and be able to induce an electronic nucleophilic reaction. It is therefore necessary for the organic radicals that are directly chemically bonded to the imino group to be electrophilic. Such organic radicals bonded to the imino group,

that is to say, organic radicals denoted by R1 and R2 in the above-mentioned general formula (I), are preferably-CO-, -COO-, -NH-, -NH<sub>2</sub>, a phenyl group, a biphenyl group, or a naphthalene group. The aldehyde-neutralizing agent of the present invention is preferably neither released from the molded product after the molten mixing with the paper resin nor the cause of **thermal decomposition**. Preferable examples of the compound represented by general formula (I) include hydantoins and imidazoles, and hydantoins are preferred in the present invention.

As examples of the hydantoins, hydantoin, 5-isopropylhydantoin, 5,5-dimethylhydantoin, 5,5-diphenylhydantoin and allantoin can be cited, but they are not limited thereto.

With regard to the antioxidant and the aldehyde-neutralizing agent that can be used in the present invention, compounds that are generally known as an 'antioxidant' or an 'aldehydeneutralizing agent' can be cited. Such antioxidants and neutralizing agents are described in, for example, Zenjiro Osawa ed. 'Degradation and Stabilization of Macromolecular Materials (Kobunshizairyo no Rekka to Anteika)' (May 1990, Published by CMC), Motonobu Minagawa ed. 'Plastic Additive Usage Notes (Plastic Tenkazai Katsuyo Note)' Jul. 5, 1996, Published by Kogyo Chosa Kai.

A cyclic organic compound having an active imino group represented by general formula (I) is added at 0.05 to 3.0 % wt of the total of the paper and the thermoplastic resins, preferably 0.06 to 2.0 wt %, and particularly preferably 0.067 to 1.0 wt %.

The method and the timing of the addition are the same as those in the case of the above-mentioned hindered phenol antioxidant.

It is preferable to add an antioxidant and an aldehydeneutralizing agent in combination to the molded product of the present invention. The amounts thereof added are the same as in the case where they are used singly. The antioxidant of the present invention is added at at least 0.05 wt % and, in addition, when 5,5-dimethylhydantoin is used as the aldehydeneutralizing agent, it is preferably added at at least 0.05 wt %. The thickness of the molded product of the present invention is from 0.5 mm to 10 mm, preferably from 0.5 mm to 5 mm, and more preferably from 0.8 mm to 3 mm.

FIGS. 1 to 3 show embodiments of the molded product for a lightsensitive material in accordance with the present invention.

FIG. 1 shows an instant film pack, which is one embodiment of the present invention. The instant film pack includes a case main body 1, a film cover 2, a light-shielding sheet 4, a lightshielding sheet 5, a base plate 6, and a flap 7. The abovementioned components 1 to 6 employ molded resin products, and the molded products of the present invention can be used for a part or the whole of these components. The components, together with a film 3, can be made into a light-sensitive material package.

FIG. 2 shows cushioning materials and a package, which are embodiments of the present invention, that are used to store a long roll of light-sensitive material disclosed in JP-A-11327089. FIG. 2 (A) is an exploded perspective view of the package, and FIG. 2 (B) and FIG. 2 (C) are perspective views of the cushioning material from different directions. The cushioning material 14 has a thickness of 1.5 mm, and is a molded product of the present invention.

FIG. 3 is a perspective view showing a case main body and a lid for FUJICOLOR SUPERIA (registered trademark of Fuji Photo Film Co., Ltd.) 400, which is one embodiment of the present invention.

In FIG. 2, the outermost periphery of a roll of light-sensitive material 11 is covered with a light-shielding sheet so that the light-sensitive material is neither exposed to light nor damaged. A light-shielding protecting plate 12 is fixed to a paper tube 11a at each of the two ends of the roll of lightsensitive material 11 in its width direction so that

the ends are neither exposed to light nor damaged. When inserting the roll of light-sensitive material 11 into a housing container 13, it is necessary to take care that the roll of light-sensitive material is not deformed or broken due to a physical shock such as a fall and that the roll of light-sensitive material is not exposed to light as a result of breakage of the light-shielding sheet or the protecting plate 12. The roll of light-sensitive material 11 is therefore inserted into the housing container 13 while supporting opposite ends of the paper tube 11a of the roll of light-sensitive material 11 by means of a pair of cushioning materials 14.

The cushioning material 14 is formed from a square substrate 14a made of a synthetic resin, a side wall 14b formed integrally on the outer periphery of the substrate 14a, a large number of reinforcing ribs 14c and 14d formed on both sides of the substrate 14a in radial directions and in directions that are orthogonal thereto, a cylindrical part 14e formed integrally on the central area of the substrate 14a and having its forward end closed, and projections 14f provided on the four corners of the substrate 14a so as to extend orthogonally therefrom. Inserting the cylindrical part 14e of the cushioning material 14 into the paper tube 11a supports the roll of light-sensitive material 11.

The molded product for a light-sensitive material of the present invention can be produced by various methods. The molded product for a light-sensitive material of the present invention is characterized in that a thermoplastic resin and a waterproof paper for printing paper, in which a base paper preferably produced for printing paper is laminated with a polyolefin, are used as starting materials, and it is molded so that the component ratio by weight of the base-paper-derived cellulose fibers and the total of the thermoplastic resins is in the range of 51:49 to 75:25 in the molded product for a light-sensitive material that is finally obtained. The 'total of the thermoplastic resins' referred to here denotes the total of the polyolefin resin that is laminated on the waterproof paper for printing paper and all of the thermoplastic resins that are added during the production process. Setting the lower limit of the proportion of the cellulose fiber component at 51 wt % ensures that the cellulose fibers are present at more than 50 wt % of the whole product.

With regard to the timing of the first addition of a thermoplastic resin, a choice can be made as to whether or not a mixture of cellulose fibers and a polyolefin resin, obtained by breaking the waterproof paper for printing paper, is by itself temporarily made into pellets. An example of the process for producing a molded product without forming the abovementioned pellets is illustrated below:

- 1) A step in which a waterproof paper for printing paper, in which a base paper produced for printing paper is laminated with a polyolefin resin, is broken to give a mixture of cellulose fibers and the polyolefin resin;
- 2) a step in which an additional thermoplastic resin, which may be molten, is added if necessary to the mixture obtained above; and
- 3) a step in which a molded product for a light-sensitive material containing the base paper and the polyolefin resin is molded so that the component ratio by weight of the base-paper-derived cellulose fibers to the total of the thermoplastic resins is in the range of 51:49 to 75:25.

An example of the process for producing a molded product involving making a mixture of cellulose fibers and a polyolefin resin, which is obtained by breaking the waterproof paper for printing paper, into pellets is illustrated below:

- 1) A step in which a waterproof paper for printing paper, in which a base paper produced for printing paper is laminated with a polyolefin resin, is broken to give a mixture of cellulose fibers and the polyolefin resin;
- 2) a step in which the mixture so obtained is by itself temporarily made into pellets, the pellets so obtained are re-broken, and the broken

cellulose fibers and polyolefin resin are kneaded with an additional thermoplastic resin at the same time as the rebreaking or separately; and 3) a step in which a molded product for a light-sensitive material containing the base paper and the polyolefin resin is molded so that the component ratio by weight of the base-paper-derived cellulose fibers to the total of the polyolefin resin and the additional thermoplastic resin is in the range of 51:49 to 75:25. This process is preferable since the compatibility of the cellulose fibers with the additional thermoplastic resin can be improved.

The above-mentioned steps can be carried out in a continuous sequence or the mixture, etc. obtained in each of the steps can be stored temporarily. The antioxidant and the aldehyde-neutralizing agent of the present invention are preferably added in the above-mentioned step 3). A more detailed example of the process for producing a molded product for a light-sensitive material of the present invention is as follows. Hereinafter, this production process example is called the 'detailed production process example'. In the examples explained below, this 'detailed production process example' will be referred to.

- (1) A waterproof paper for printing paper, in which a base paper produced for printing paper is laminated with a polyolefin resin, is roughly broken using a shearing machine. As one embodiment, it is cut into 30 x 30 mm square pieces.
  - (2) The waterproof paper roughly broken in this way is fiberized into cellulose fibers in a torn flock form by the beating action of pins using a pin mill or a breaking action under friction using a refiner.
  - (3) The bulky flock-form mixture of the cellulose fibers and the polyolefin resin is compression-kneaded using a pellet mill to give compact pellets.
  - (4) The pellets obtained in the above-mentioned step are subsequently broken using a turbo mill.
  - (5) An additional thermoplastic resin powder is added to the mixture of cellulose fibers and polyolefin resin so broken, and they are again kneaded to form pellets using a pellet mill.
  - (6) The pellets containing the cellulose fibers, the polyolefin resin, and the additional thermoplastic resin obtained in the above-mentioned step are kneaded using an extruder to give paper resin pellets.
  - (7) The paper resin pellets thus obtained, concentrated antioxidant pellets, and concentrated aldehyde-neutralizing pellets are supplied to an injection-molding machine and injection-molded into the desired form.
- The above-mentioned steps can be modified in a variety of ways. For example, in the above-mentioned breaking step (4) the pellets obtained in step (3) and lumps of an additional thermoplastic resin may be broken together to give a mixture. This mixture can be supplied to the pellet mill in step (5).

It is surmised that, since the molded product for a light-sensitive material of the present invention uses a waterproof paper for printing paper as a starting material, the broken polyolefin resin and the broken cellulose fibers are uniformly mixed in step (2), which employs a pin mill or a refiner. It is therefore possible to achieve good mixing of the cellulose fibers, the polyolefin resin, and an additional thermoplastic resin with each other during the subsequent steps (3) to (5).

It is also possible to prepare the pellets in step (6) using an amount of thermoplastic resin that is smaller than the final amount that is to be added, and the remainder of the thermoplastic resin is added in order to mold a lining layer, etc. when injection-molding the molten pellets. The number of steps in which the thermoplastic resin is added and the amount thereof added can be chosen freely as long as the injection molding is carried out so that the component ratio by weight of the base paper to the total of the thermoplastic resins in the molded product is in the range of 51:49 to 75:25. The remainder of the thermoplastic resin can

also be used for molding a lining layer by two-color molding or insert molding.

When the proportion of the base paper component exceeds 75 wt %, the injection pressure rapidly increases, thereby making it impossible to carry out injection molding in a stable manner. This upper limit is much higher in the case where a waterproof paper for printing paper is used than is the case where cellulose fibers from recycled newspaper, etc. are used by themselves as a starting material.

In the kneading operation in step (5) of the above-mentioned detailed production process example, the moisture content of the cellulose fibers that are kneaded with the thermoplastic resin is preferably 5 wt % to 40 wt %, and more preferably 10 wt % to 20 wt %. Maintaining this moisture content can fully utilize the resin-reinforcing function of the cellulose fibers.

A refiner that can be used in the fiberizing step (2) of the above-mentioned detailed production process example is explained below. FIG. 4 shows cross sections of a stationary disc and a rotary disc of one example of the refiner. FIG. 5 is a lateral cross section of one example of the refiner.

This step is a step for fiberizing the cellulose fibers of the paper to break them into the flock-form cellulose fibers.

The refiner comprises a stationary disc 23 and a rotary disc 24. As shown in FIG. 4, the stationary disc 23 has stationary projections 25 arranged in a line on coaxial circles A on one side of the disc and the rotary disc 24 has moving projections 26 arranged on coaxial circles B on one side of the disc, the coaxial circles B being positioned between the coaxial circles A. As shown in FIG. 5, the above-mentioned stationary disc 23 and rotary disc 24 are made to face each other so that the stationary projections 25 and the moving projections 26 mesh with each other.

In this state, rotating the rotary disc 24 around its central axis abrades WP paper (or recycled paper), etc. between the stationary projections 25 and the moving projections 26, thereby breaking the paper.

In FIG. 5, 28 denotes a case and 27 denotes a mesh drum. Since the WP paper (or recycled paper) is broken by abrading it between the stationary projections 25 and the moving projections 26, the WP paper (or recycled paper) is kneaded and disentangled between the stationary projections 25 and the moving projections 26, thereby achieving sufficient fiberization while suppressing cutting of the fiber.

A turbo mill that can be used in step (4) of the detailed production process example is explained below.

FIG. 6 is a vertical longitudinal cross section of a turbo mill. FIG. 7 is a magnified cross section at line I-I in FIG. 6, which shows the shape of a blade 31 having a triangular cross section and a rotor 32.

1) In the turbo mill as shown in FIG. 7, the inner face of the cylindrical blade 31 is provided with a large number of grooves 33 having a triangular cross section, and the cylindrical surface of the rotor 32 is provided with ridges 34.

2) The large number of ridges 34 of the rotor 32 rotating at high speed cause a flow of air around the outer circumference of the rotor 32, the air flow having a high flow rate in the rotational direction of the rotor 32. This air flow is compressed when the tips of the ridges 34 of the rotor 32 approach the grooves 33 provided on the inside of the blade 31, and the air flow is expanded when the tips of the ridges 34 depart from the grooves 33, thereby causing high frequency pressure vibrations.

3) In FIG. 6, pellets that are supplied through an inlet (not illustrated) are broken finely by the above-mentioned pressure vibrations.

4) The pellets that have been finely broken by the turbo mill are collected together with the air by a cyclone bag filter.

5) Controlling the number of turbo mill treatments can achieve a desired

fiber length.

A known kneading machine such as a pressure type kneader can be used for kneading.

Other preferable conditions for the kneading step are described in JP-A-5-50427.

The kneading temperature is preferably from 90 degrees C. to 220 degrees C., and particularly preferably from 140 degrees C. to 170 degrees C. When the kneading temperature is less than 90 degrees C., the kneading tends to be insufficient. This tendency can be observed to some extent until the temperature reaches 140 degrees C. When the kneading temperature exceeds 220 degrees C., since the cellulose easily decomposes, a large amount of components that will adversely affect the lightsensitive material are generated.

The light-sensitive material package comprises a molded product for a light-sensitive material obtained by any one of the abovementioned processes and a light-sensitive material that is used with the molded product. In the case where the molded product for a light-sensitive material is a container, a lightsensitive material can be housed therein to give a lightsensitive package.

In order to impart light-shielding performance to a paper resin, the addition of 0.05 to 25 wt % of a light-shielding material thereto can improve the light-shielding function that is required for a molded product used on the periphery of a photographic light-sensitive material without degrading the chemical and physical properties of the paper resin. When the amount is less than 0.05 wt %, light-shielding performance cannot be exhibited, which not only fails to achieve the object of the addition but also increases the cost. When the amount exceeds 25 wt %, the physical strength is degraded and at the same time the appearance becomes poor.

Examples of the light-shielding material that can be added in order to introduce light-shielding performance are as follows:

(1) Inorganic compounds

A. Oxides

Silica, diatomaceous earth, alumina, titanium oxide, iron oxide, zinc oxide, magnesium oxide, antimony oxide, barium ferrite, strontium ferrite, beryllium oxide, pumicite, pumicite balloons, alumina fibers, etc.

B. Carbonates

Calcium carbonate, magnesium carbonate, dolomite, dawsonite, etc.

C. Silicates

Talc, clay, mica, asbestos, glass fiber, glass balloons, glass beads, calcium silicate, montmorillonite, bentonite, etc.

D. Carbon

Carbon black, graphite, carbon fiber, hollow carbon spheres, etc.

E. Others

Iron powder, copper powder, lead powder, tin powder, stainless steel powder, pearl pigment, aluminum powder, molybdenum sulfide, boron fiber, silicon carbide fiber, yellow copper fiber, potassium titanate, lead titanate zirconate, zinc borate, barium metaborate, calcium borate, sodium borate, aluminum paste, etc.

(2) Organic compounds

Wood powder (pine, oak, sawdust, etc.), husk fiber (almond, peanut, chaff, etc.), various types of colored fiber such as cotton and jute, paper pieces, cellophane pieces, nylon fiber, polypropylene fiber, starch, aromatic polyamide fiber, etc.

There are various modes for preparing a light-shielding material, but a concentrated master batch method is preferable in terms of cost, prevention of contamination of the workplace, etc. JPB-40-26196 (JP-B denotes Japanese examined patent application publication) discloses a method for preparing a polymer-carbon black master batch by dispersing

carbon black in a solution of a polymer dissolved in an organic solvent, and JP-B-43-10362 discloses a method for preparing a concentrated master batch by dispersing carbon black in polyethylene. Pellets obtained by mixing a thermoplastic resin with 10 wt % of carbon black in a concentrated manner can be used. A desired light-shielding performance can be obtained by adding carbon black at about 0.5 wt % to the molded product of the present invention.

With regard to the carbon black that is used in the molded product for a light-sensitive material of the present invention, carbon black having a pH of 6.0 to 9.0 and an average particle size of 10 to 120  $\mu\text{m}$  is preferred since fog is not caused in a light-sensitive material, changes in light sensitivity are suppressed, the light-shielding ability is high, and the occurrence of pinholes due to the formation of lumps of carbon black and fisheyes is suppressed even when it is added to the resin composition in the present invention. In particular, furnace carbon black having a volatile component content of 2.0% or less and an oil adsorption of 50 ml/100 g or more is preferred. Channel carbon black is expensive and tends to cause undesirable fog in a light-sensitive material. When its use is required, it should be chosen after examining its influence on the photographic properties.

Examples of preferable commercial products include Carbon black #20(B), #30(B), #33(B), #40(B), #44(B), #45(B), #50, #55, #100, #600, #2200(B), #2400, #950(B), MA8, MA11 and MA100 (all manufactured by Mitsubishi Chemical Corp.).

As examples of commercial products available outside Japan, Black Pearls 2, 46, 70, 71, 74, 80, 81, 607, etc., Regal 300, 330, 400, 660, 991, SRF-S, etc. Vulcan 3, 6, etc., and Sterling 10, SO, V, S, FT-FF, MT-FF, etc. (all manufactured by Cabot) can be cited. Furthermore, Printex-Alfa and Printex-90 (all manufactured by Degussa-Huls) can be cited. However, they are not limited thereto.

The amount of light-shielding material added is usually 0.05 to 25 wt % relative to the weight of the final molded product, preferably 0.1 to 15 wt %, more preferably 0.5 to 10 wt %, and most preferably 1.0 to 7.0 wt %.

Since the paper resin in the present invention has a low melt flow rate (MFR), a lubricant can be added as long as the effect of the present invention is not degraded.

The names of typical lubricants that can be used in the molded product of the present invention and their manufacturers' names are listed below.

(1) Silicone type lubricants

Various grades of dimethylpolysiloxane and modified compounds thereof (Shin-etsu Silicone Co., Ltd., Toray Silicone, Inc.)

(2) Oleamide type lubricants

Armoslip CP (Lion Akzo), Neutron (Nippon Fine Chemical Co., Ltd.), Neutron E-18 (Nippon Fine Chemical Co., Ltd.), Amido O (Nitto Chemical Industry Co., Ltd.), Alfro E:10 (NOF Corp.), Diamid O200 (Nippon Kasei Chemical Co., Ltd.), Diamid C-200 (Nippon Kasei Chemical Co., Ltd.), etc.

(3) Erucamide type lubricants

Alfro-F-10 (NOF Corp.), etc.

(4) Stearamide type lubricants

Alfro-S-10 (NOF Corp.), Neutron 2 (Nippon Fine Chemical Co., Ltd.), Diamid 200 (Nippon Kasei Chemical Co., Ltd.), etc.

(5) Bisfatty acid amide type lubricants

Bisamide (Nippon Kasei Chemical Co., Ltd.), Diamid 200 Bis (Nippon Kasei Chemical Co., Ltd.), Armowax BBS (Lion Akzo), etc.

(6) Nonionic surfactant type lubricants

Electrostripper TS-2, Electrostripper-TS-3 (Kao Corp.), etc.

(7) Hydrocarbon type lubricants

Liquid paraffin, natural paraffin, microwax, synthetic paraffin, polyethylene wax, polypropylene wax, chlorinated hydrocarbons,



fluorocarbons.

(8) Fatty acid type lubricants

Higher fatty acids (preferably those having 12 carbons or more), oxyfatty acids.

(9) Ester type lubricants

Lower alcohol esters of fatty acids, polyhydric alcohol esters of fatty acids, polyglycol esters of fatty acids, fatty alcohol esters of fatty acids

(10) Alcohol type lubricants

Polyhydric alcohols, polyglycols, polyglycerols.

(11) Metallic soaps

Compounds of a higher fatty acid such as lauric acid, stearic acid, ricinoleic acid, naphthenic acid or oleic acid and a metal such as Li, Mg, Ca, Sr, Ba, Zn, Cd, Al, Sn or Pb.

Preferred embodiments of the molding method of the present invention are listed below.

1) Relationship between the photographic properties and the cylinder temperature when molding

When using paper resin pellets in the present invention, there is a tendency for the cellulose component forming the paper resin pellets to undergo **thermal decomposition** when molding, thereby causing degradation in the photographic properties, and it is therefore preferable for the molding temperature to be as low as possible. From the results of examining the relationship between the cylinder temperature and the photographic properties, it is desirable for the cylinder temperature to be 180 degrees C. or less, preferably 170 degrees C. or less, and more preferably in the range of 150 degrees C. to 170 degrees C.

2) Relationship between the moldability and the MFR of a resin that is added to the paper resin pellets

Since the paper resin pellets produced from a WP paper have a comparatively long fiber length, the moldability is poor. When the flowability of the resin that is added thereto is poor, short shot molded products are formed. As a result of an investigation by the present inventors, taking the extent of sink marks in the molded product (indentations in the molded product) into consideration, the MFR of the resin that is added is preferably at least 15 g/10 min., more preferably at least 30 g/10 min., and most preferably 45 to 80 g/10 min.

With regard to the molded products for light-sensitive materials of the present invention, there are, for example, a moistureproof container and its associated member for photographic color paper and, in particular, a moisture-proof container and its component member housing a light-shielding container (cartridge) for photographic film, an instant film pack shown in FIG. 3 (0.9 mm thick black container for instax mini (registered trade name) card size instant film by Fuji Photo Film Co., Ltd.), and a moisture-proof container (including a cover) shown in FIG. 3 for a 135 format film cartridge. In addition, the molded product of the present invention can be used as a 135 format spool, a cartridge for an APS format film, a 110 format film cartridge, a cuboid-shaped cartridge housing a light-sensitive material for printing, a paper tube around which a long length of light-sensitive material is wound, a flange for winding up a long length of light-sensitive material and retaining the opposite sides thereof, a cushioning material that is placed in a container for a light-sensitive material, supporting board for a light-sensitive material laminate (a package or a part thereof that is in contact with a light-sensitive material laminate), a film container equipped with a lens (registered trademark 'Utsurundesu' of Fuji Photo Film, Co., Ltd.), etc.

The molded product of the present invention does not degrade the photographic properties and has excellent mechanical properties.

Furthermore, the proportion of cellulose fibers in the molded product exceeds 50 wt %, and the product can therefore be disposed of with a lower burden on the environment.

Refuse from uncoated printing paper generated in the process for the production of printing paper, etc. can be effectively recycled to give a light-sensitive material package or a functional component.

Molding at a cylinder temperature of as low as about 170 degrees C. using an antioxidant and an aldehyde-neutralizing agent can give a container having a good storage performance so that it does not degrade the photographic properties of a light sensitive material that is housed therein. !

L41 ANSWER 7 OF 11 IFIPAT COPYRIGHT 2006 IFI on STN  
 AN 02018931 IFIPAT;IFIUDB;IFICDB  
 TITLE: METHOD OF MANUFACTURING **PHENOLS** FROM LIGNIN  
 INVENTOR(S): Kachi, Shogo, Kashiwa, JP  
 Kakemoto, Gohki, Tokyo, JP  
 Sagara, Hiroshi, Handa, JP  
 Suzuki, Noriyuki, Handa, JP  
 PATENT ASSIGNEE(S): Japan Pulp & Paper Research Institute, Inc, Tokyo, JP  
 JGC Corporation, Tokyo, JP  
 PRIMARY EXAMINER: Lone, Werren B  
 AGENT: Cushman, Darby and Cushman

	NUMBER	PK	DATE
PATENT INFORMATION:	US 4900873	A	19900213
	(CITED IN 001 LATER PATENTS)		
APPLICATION INFORMATION:	US 1988-245803		19880919
EXPIRATION DATE:	19 Sep 2008		

	NUMBER	DATE
PRIORITY APPLN. INFO.:	JP 1987-234911	19870921
FAMILY INFORMATION:	US 4900873	19900213
DOCUMENT TYPE:	Utility	
	EXPIRED	
FILE SEGMENT:	CHEMICAL	
	GRANTED	

MICROFILM REEL NO: 004950 FRAME NO: 0084  
 NUMBER OF CLAIMS: 9  
 GRAPHICS INFORMATION: 1 Drawing Sheet(s), 1 Figure(s).

AB **Phenols** such as cresol, phenol and xylenol etc. are obtained by **thermal decomposition** of a lignin-containing material in a state of a mixture of the lignin-containing material and a double ring aromatic hydrocarbon solvent. Spent liquid of a solvolysis pulping process can be used as the lignin-containing raw material in the present invention for manufacturing **phenols**, and the **phenols** obtained can be utilized as the solvent in the solvolysis process resulting in cost reduction in the pulp production process by self-supplying the necessary solvent in the solvolysis process.

CLMN 9  
 GI 1 Drawing Sheet(s), 1 Figure(s).

L41 ANSWER 8 OF 11 NTIS COPYRIGHT 2006 NTIS on STN  
 ACCESSION NUMBER: 1977(43):00110  
 NTIS ORDER NUMBER: PERC/RI-77/6/XAB  
 TITLE: Decomposition Characteristics of Phenol under Synthane Gasifier Conditions.

AUTHOR: Fillo, J. P.; Massey, M. J.; Strakey, J. P.; Nakles, D. V.; Haynes, W. P.  
CORPORATE SOURCE: Energy Research and Development Administration, Pittsburgh, Pa. Pittsburgh Energy Research Center. (9500865)  
NUMBER OF REPORT: PERC/RI-77/6/XAB  
47p; Apr 1977  
CONTROLLED TERM: Report  
COUNTRY: United States  
LANGUAGE: English  
AVAILABILITY: Order this product from NTIS by: phone at 1-800-553-NTIS (U.S. customers); (703)605-6000 (other countries); fax at (703)605-6900; and email at orders@ntis.gov. NTIS is located at 5285 Port Royal Road, Springfield, VA, 22161, USA.  
NTIS Prices: PC A03/MF A01  
OTHER SOURCE: GRA&I7723; ERA0200

AB Major conclusions to be drawn from this study regarding the decomposition characteristics of phenol are: the rate-determining step in the decomposition of phenol appears to be the initial **thermal decomposition** of the aromatic molecule; hydrogen partial pressure in the reactor does not affect the extent of phenol decomposition but is important in determining the subsequent decomposition products of phenol; reaction gas composition remains stable over the range of conditions where phenol decomposition was studied; and solid char surface appears to substantially increase the high temperature vapor phase decomposition of phenol without causing methane decomposition. The first and second conclusions are consistent with observed data for the decomposition of unsubstituted aromatic compounds for which a proportionality between experimental activation energy and calculated delocalization energy has been indicated. This may suggest a rationale for hypothesizing the reactivity of other phenolic compounds present in SYNTHANE gasifier aqueous effluents, relative to phenol. Conclusions three and four, coupled with knowledge of the extent of observed phenol decomposition, provide a rationale for explaining decreases in effluent phenol production with increased depth of coal injection, as previously reported for the SYNTHANE PDU. These data also suggest that significant decreases in phenol production should be seen in the 72 TPD SYNTHANE pilot **plant**. Finally, these data suggest that a viable alternative may exist to present largescale treatment of coal gasifier effluents. The susceptibility of phenol, and other hydrocarbons (e.g., tars, **oils**) **produced** during coal gasification, to **thermal decomposition** makes thermal treatment of raw gasifier effluents a reasonable possibility. (ERA citation 02:040351)

L41 ANSWER 9 OF 11 SCISEARCH COPYRIGHT (c) 2006 The Thomson Corporation on STN

ACCESSION NUMBER: 1991:581947 SCISEARCH  
THE GENUINE ARTICLE: GK474  
TITLE: THERMOCHEMICAL PROCESSING OF VEGETABLE BIOMASS - STUDY OF THE **THERMAL-DECOMPOSITION** OF ASCLEPIAS-SYRIACA L LATEX-BEARING **PLANT**  
AUTHOR: CASCAVAL C N (Reprint); AGHERGHINEI I; STOLERIU A; ROSU D  
CORPORATE SOURCE: PETRU PONI INST MACROMOLEC CHEM, R-6600 IASI, ROMANIA  
COUNTRY OF AUTHOR: ROMANIA  
SOURCE: CELLULOSE CHEMISTRY AND TECHNOLOGY, (NOV-DEC 1990) Vol. 24, No. 6, pp. 751-760.  
ISSN: 0576-9787.  
PUBLISHER: EDITURA ACADEMIEI ROMANE, CALEA VICTORIEI 125, BUCHAREST

79717, ROMANIA.  
DOCUMENT TYPE: Article; Journal  
FILE SEGMENT: ENGI  
LANGUAGE: English  
REFERENCE COUNT: 12  
ENTRY DATE: Entered STN: 1994  
Last Updated on STN: 1994

\*ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS\*

AB Asclepias syriaca L. latex-bearing **plant** can be processed in order to extract chlorophylls, hydrocarbons, **phenols**, oils, a.s.o. The residue remaining after successive extractions is further subjected to pyrolysis. The thermal behaviour of Asclepias syriaca L. latex-bearing **plant**, which was analysed on its morphological parts, shows a complex degradation mechanism. The kinetic parameters analysed (order of reaction, activation energy and pre-exponential factor) indicate the special behaviour of the sample of seeds fibers, materialized in a very fast decomposition and a high activation energy. The experimental data obtained both for the initial and the delignified samples (holocelluloses) do not show a direct correlation between the lignin content and the pattern of **thermal decomposition**.

L41 ANSWER 10 OF 11 JICST-EPlus COPYRIGHT 2006 JST on STN

ACCESSION NUMBER: 1040174882 JICST-EPlus  
TITLE: Products and Antibacterial Activity of Thermolysis of Apple Lees  
AUTHOR: KITAHARA H; KITAYAMA Y; ISHIKAWA D; SAKURAI T; KAWAKAMI J; NAGAKI M; FUKUI T; OKABE T  
CORPORATE SOURCE: Hirosaki Univ., Hirosaki, Jpn  
Byotai-seiri Lab., Tokyo, Jpn  
Industrial Res. Inst. Aomori Prefecture, Hirosaki, Jpn  
SOURCE: Trans Mater Res Soc Jpn, (2003) vol. 28, no. 4, pp. 1045-1048. Journal Code: L4468A (Fig. 2, Tbl. 6, Ref. 4)  
ISSN: 1382-3469  
PUB. COUNTRY: Japan  
DOCUMENT TYPE: Conference; Article  
LANGUAGE: English  
STATUS: New

AB Wood vinegar was produced as a by-product of wood ceramic production by heating apple juice pomace in an incinerator. The wood vinegar contained many chemical compounds and had various biological activities. These compounds were organic acids such as acetic and propionic acids, **phenols** such as vanillin, carbonyl compounds such as acetone and acetaldehyde, and alcohols such as methanol and propionol. However, relationships between these chemical structures and their biological activities had not been elucidated. Antimicrobial activities of extracts isolated from the wood vinegar were studied in this research. The result showed that the wood vinegar possessed a high antibacterial activity to Staphylococcus aureus. In addition, strongly antibacterial substances were successfully extracted from the wood vinegar in this research.

L41 ANSWER 11 OF 11 JICST-EPlus COPYRIGHT 2006 JST on STN

ACCESSION NUMBER: 980936219 JICST-EPlus  
TITLE: Capillary Gas Chromatographic Analysis of Wood-Vinegar and Water Extract of Wood-Tar Prepared from Hard Wood Barks.  
AUTHOR: MATSUI TAKANAO; MATSUSHITA YOICHI; SUGAMOTO KAZUHIRO; TANAKA TATSUNARI; LI Y X  
CORPORATE SOURCE: Miyazaki Univ.

SOURCE: Miyazaki Univ., Grad. Sch.  
Mem Fac Eng Miyazaki Univ, (1998) no. 27, pp. 51-56.  
Journal Code: G0471A (Fig. 2, Tbl. 2, Ref. 13)  
ISSN: 0540-4924

PUB. COUNTRY: Japan

DOCUMENT TYPE: Journal; Article

LANGUAGE: Japanese

STATUS: New

AB The wood-vinegar and the water-extracted solution of wood-tar prepared from hard wood barks were analyzed by capillary gas chromatography(capillary GC). Thirty-seven compounds such as alcohols, carboxylic acids, ketones, furans, phenol, alkyl **phenols**, guaiacol, substituted guaiacols, syringol, and substituted syringols were determined. The constituent varieties and contents of the wtaer-extracted solution of the wood-tar were found to be similar to those of the wood-vinegar. (author abst.)

=> d que stat 139

L13 1 SEA FILE=REGISTRY ABB=ON "OLIVE OIL"/CN  
 L15 896 SEA FILE=HCAPLUS ABB=ON PHENOLS+ALL AND THERMAL DECOMPOSITION+  
 ALL  
 L16 4 SEA FILE=HCAPLUS ABB=ON L15 AND (L13 OR ?OLIVE?(W)OIL?)  
 L17 8 SEA FILE=HCAPLUS ABB=ON L15 AND ?PLANT?(W)?MATERIAL?  
 L18 11 SEA FILE=HCAPLUS ABB=ON L16 OR L17  
 L19 1 SEA FILE=HCAPLUS ABB=ON L18 AND ?AUTOCLAVE?  
 L20 8 SEA FILE=HCAPLUS ABB=ON L18 AND (L17 OR ?TYROSOL?)  
 L21 11 SEA FILE=HCAPLUS ABB=ON L18 OR L19 OR L20  
 L36 26 SEA FILE=USPATFULL ABB=ON L21 AND (PRD<20040316 OR PD<20040316  
 )  
 L37 2 SEA FILE=USPATFULL ABB=ON L36 AND (HPLC OR ?HIGH?(W)?PERFORM?(  
 W)?LIQUID?(W)?CHROMATOG?)  
 L38 26 SEA FILE=USPATFULL ABB=ON L37 OR L36  
 L39 20 SEA FILE=USPATFULL ABB=ON L38 AND ?OLIVE?(W)OIL?

=> d ibib abs 139 1-20

L39 ANSWER 1 OF 20 USPATFULL on STN

ACCESSION NUMBER: 2005:130696 USPATFULL

TITLE: Cosmetic composition comprising a passivated and  
 optionally coated metal particles

INVENTOR(S): Giroud, Franck, Clichy, FRANCE  
 Samain, Henri, Bievres, FRANCE

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2005112155	A1	20050526
APPLICATION INFO.:	US 2004-915461	A1	20040811 (10)

	NUMBER	DATE	
PRIORITY INFORMATION:	FR 2003-50422	20030811	<--
	US 2003-511578P	20031016 (60)	<--

DOCUMENT TYPE: Utility

FILE SEGMENT: APPLICATION

LEGAL REPRESENTATIVE: Thomas L. Irving, FINNEGAN, HENDERSON, FARABOW,,  
 GARRETT & DUNNER, L.L.P., 1300 I Street, N.W.,  
 Washington, DC, 20005-3315, US

NUMBER OF CLAIMS: 87

EXEMPLARY CLAIM: 1

LINE COUNT: 1671

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The disclosure relates to a cosmetic composition comprising, in a  
 physiologically acceptable medium, passivated particles predominantly  
 comprising of at least one metal, the passivated particles treated at  
 their outer surface with at least one carboxylate group of formula  
 ##STR1## wherein, R is chosen from a linear hydrocarbon having from 6  
 to 40 carbons optionally comprising one or more ethylenic double bonds  
 and, in addition, optionally being substituted by one or more  
 substituents chosen from hydroxyl and halogen groups, and the size of  
 the particles being less than or equal to 500 nm. The disclosure also  
 relates to a cosmetic process for the treatment of keratinous substances  
 comprising the application to keratinous substances, such as the hair,  
 of the above composition.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L39 ANSWER 2 OF 20 USPATFULL on STN

ACCESSION NUMBER: 2005:11933 USPATFULL

TITLE: Oil ozonolysis

INVENTOR(S): Fitchett, Colin Stanley, Cambridge, UNITED KINGDOM  
 Laughton, Nicholas Geoffrey, Cambridge, UNITED KINGDOM  
 Chappell, Colin Graham, Essex, UNITED KINGDOM  
 Khan, Mohammed Lokman, Sheffield, UNITED KINGDOM  
 Tverezovskiy, Viacheslav, Gwynedd, UNITED KINGDOM  
 Tomkinson, Jeremy, JT, UNITED KINGDOM  
 Fowler, Paul, Gwynedd, UNITED KINGDOM

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2005010069	A1	20050113
APPLICATION INFO.:	US 2004-497572	A1	20040909 (10)
	WO 2002-GB5610		20021211

	NUMBER	DATE	
PRIORITY INFORMATION:	GB 2001-29590	20011211	<--
DOCUMENT TYPE:	Utility		
FILE SEGMENT:	APPLICATION		
LEGAL REPRESENTATIVE:	HELLER EHRMAN WHITE & MCAULIFFE LLP, 1666 K STREET,NW, SUITE 300, WASHINGTON, DC, 20006		
NUMBER OF CLAIMS:	64		
EXEMPLARY CLAIM:	1		
NUMBER OF DRAWINGS:	23 Drawing Page(s)		
LINE COUNT:	1247		

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB Ozonolysis is a well known process involving reacting ozone with alkene compounds, for example in unsaturated vegetable oils or free fatty acids and esters thereof, to form ozonolysis products (e.g. ozonides). The invention concerns ozonolysis of unsaturated oils (e.g. unsaturated plant oils and/or unsaturated animal oils) in the presence of a participating co-reactant to form reaction products particularly suitable for use in the formation of resins.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L39 ANSWER 3 OF 20 USPATFULL on STN

ACCESSION NUMBER: 2004:279997 USPATFULL

TITLE: Washing, rinsing or cleaning products in portions in flexible water-soluble containers

INVENTOR(S): Raehse, Wilfried, Duesseldorf, GERMANY, FEDERAL  
 REPUBLIC OF  
 Hoffmann, Sandra, Muenchen, GERMANY, FEDERAL REPUBLIC  
 OF

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2004219297	A1	20041104
APPLICATION INFO.:	US 2004-821165	A1	20040408 (10)
RELATED APPLN. INFO.:	Continuation of Ser. No. WO 2002-EP9970, filed on 6 Sep 2002, UNKNOWN		

	NUMBER	DATE	
PRIORITY INFORMATION:	DE 2001-149718	20011009	<--
DOCUMENT TYPE:	Utility		

FILE SEGMENT: APPLICATION  
 LEGAL REPRESENTATIVE: HENKEL CORPORATION, THE TRIAD, SUITE 200, 2200  
 RENAISSANCE BLVD., GULPH MILLS, PA, 19406  
 NUMBER OF CLAIMS: 73  
 EXEMPLARY CLAIM: 1  
 LINE COUNT: 2811

AB A portioned washing, rinsing, or cleaning product, wherein a preparation is surrounded by an enclosure. The unfilled enclosure is deformable by a force  $F_{sub.1} > 0$  N and  $\leq 500$  N along a path  $s_{sub.1}$  and, after the force has ceased, returns in the direction of its original shape with a recovery rate  $v > 0$  mm/min and  $\leq 1000$  mm/min. Also, a process for preparing the portioned product by injection molding, extrusion blowing, or thermoforming.

L39 ANSWER 4 OF 20 USPATFULL on STN

ACCESSION NUMBER: 2004:197603 USPATFULL  
 TITLE: Cyclic phosphazenes, process for preparing them, flame retardants containing the same as the active ingredient, and resin composition containing and molded articles containing the flame retardants  
 INVENTOR(S): Fukuoka, Naohiko, Koube-shi, JAPAN  
 Yasuda, Heinosuke, Koube-shi, JAPAN  
 Nishimatsu, Masayuki, Koube-shi, JAPAN  
 Ohmae, Yoshinori, Koube-shi, JAPAN

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2004152910	A1	20040805
APPLICATION INFO.:	US 2003-479235	A1	20031201 (10)
	WO 2002-JP5554		20020605

	NUMBER	DATE	
PRIORITY INFORMATION:	JP 2001-170228	20010605	<--
	JP 2001-170319	20010605	<--

DOCUMENT TYPE: Utility  
 FILE SEGMENT: APPLICATION  
 LEGAL REPRESENTATIVE: Oliff & Berridge, PO Box 19928, Alexandria, VA, 22320  
 NUMBER OF CLAIMS: 10  
 EXEMPLARY CLAIM: 1  
 LINE COUNT: 882

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The present invention relates to cyclic phosphazenes of general formula (1) ##STR1##

wherein Q is a halogen and/or an aryloxy group, and m is an integer of 3 to 10, which are characterized by being substantially free from linear phosphazenes of general formula (2) ##STR2##

wherein Q is a halogen and/or an aryloxy group, and n is an integer of 1 to 20 and by having an extremely low content of halogen, and which are appropriate to flame retardants for resins; processes for preparing the same; flame retardants containing the same as an active ingredient; resin compositions containing the cyclic phosphazenes; and molded articles therefrom.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L39 ANSWER 5 OF 20 USPATFULL on STN



ACCESSION NUMBER: 2004:197500 USPATFULL  
TITLE: Polycarbonate resin composition, pellets thereof and  
molded article thereof  
INVENTOR(S): Koga, Takashi, Chiyoda-ku, JAPAN  
Takeo, Mitsuhiro, Chiyoda-ku, JAPAN  
Takahashi, Daisuke, Chiyoda-ku, JAPAN

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2004152806	A1	20040805
APPLICATION INFO.:	US 2004-483126	A1	20040108 (10)
	WO 2003-JP5591		20030501

	NUMBER	DATE	
PRIORITY INFORMATION:	JP 2002-132434	20020508	<--
	JP 2002-187962	20020627	<--
DOCUMENT TYPE:	Utility		
FILE SEGMENT:	APPLICATION		
LEGAL REPRESENTATIVE:	WENDEROTH, LIND & PONACK, L.L.P., 2033 K STREET N. W., SUITE 800, WASHINGTON, DC, 20006-1021		
NUMBER OF CLAIMS:	29		
EXEMPLARY CLAIM:	1		
NUMBER OF DRAWINGS:	2 Drawing Page(s)		
LINE COUNT:	2424		

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The object of the present invention is to provide a polycarbonate resin composition which has excellent transparency and durability against molding heat, which gives a molded article having an excellent mold release property, reduced strains, improved cracking resistance and, preferably, weatherability, and which is particularly suitable for a transparent member for a vehicle, pellets thereof and a molded article thereof, and the present invention provides a polycarbonate resin composition obtained by blending 100 parts by weight of a polycarbonate resin (Component A) and 0.005 to 2 parts by weight of a full ester (Component B) from an aliphatic polyhydric alcohol having 4 to 8 hydroxyl groups and 5 to 30 carbon atoms and an aliphatic carboxylic acid having 10 to 22 carbon atoms, said Component B having a 5% weight loss temperature, measured by TGA (thermogravimetric analysis), of 250 to 360° C. and having an acid value of 4 to 20, pellets thereof and a molded article thereof.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L39 ANSWER 6 OF 20 USPATFULL on STN

ACCESSION NUMBER: 2004:121207 USPATFULL  
TITLE: Aqueous inkjet ink composition  
INVENTOR(S): Hesler, Carl Michael, New Egypt, NJ, UNITED STATES  
Johnson, Eric Alvin, Lansdale, PA, UNITED STATES

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2004092623	A1	20040513
APPLICATION INFO.:	US 2003-699900	A1	20031103 (10)

	NUMBER	DATE	
PRIORITY INFORMATION:	US 2002-425516P	20021112 (60)	<--
DOCUMENT TYPE:	Utility		
FILE SEGMENT:	APPLICATION		

LEGAL REPRESENTATIVE: ROHM AND HAAS COMPANY, PATENT DEPARTMENT, 100  
INDEPENDENCE MALL WEST, PHILADELPHIA, PA, 19106-2399  
NUMBER OF CLAIMS: 6  
EXEMPLARY CLAIM: 1  
LINE COUNT: 494

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB An aqueous inkjet ink composition suitable for printing on a hydrophobic surface such as a vinyl surface including an aqueous emulsion polymer having a glass transition temperature (Tg) of from -40° C. to 150° C.; a pigment; and a water-soluble surface agent is provided. Also provided is a method for providing an image on a hydrophobic surface and the image so provided.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L39 ANSWER 7 OF 20 USPATFULL on STN

ACCESSION NUMBER: 1999:78784 USPATFULL  
TITLE: Polyol blends for producing hydrocarbon-blown polyurethane and polyisocyanurate foams  
INVENTOR(S): Hickey, F. Leo, Arlington Heights, IL, United States  
PATENT ASSIGNEE(S): Stepan Company, Northfield, IL, United States (U.S. corporation)

	NUMBER	KIND	DATE	
PATENT INFORMATION:	US 5922779		19990713	<--
APPLICATION INFO.:	US 1997-949239		19971010	(8)
DOCUMENT TYPE:	Utility			
FILE SEGMENT:	Granted			
PRIMARY EXAMINER:	Gorr, Rachel			
LEGAL REPRESENTATIVE:	McDonnell Boehnen Hulbert & Berghoff			
NUMBER OF CLAIMS:	14			
EXEMPLARY CLAIM:	1			
LINE COUNT:	1224			

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB Disclosed are aromatic polyester polyols, polyester polyol resin blends, methods for preparing such compositions and polyurethane and polyisocyanurate foams made using the compositions, wherein the resin blends generally comprise:

(a) an aromatic polyester polyol formed by a reaction between a phthalic acid based material; a hydroxylated material having a functionality of at least 2; and a hydrophobic material;

(b) a nonionic surfactant; and

(c) a C.sub.4 -C.sub.7 hydrocarbon blowing agent.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L39 ANSWER 8 OF 20 USPATFULL on STN

ACCESSION NUMBER: 93:72149 USPATFULL  
TITLE: Ashless dispersants formed from substituted acylating agents and their production and use  
INVENTOR(S): Degonia, David J., Granite City, IL, United States  
Griffin, Paul G., Collinsville, IL, United States  
PATENT ASSIGNEE(S): Ethyl Petroleum Additives, Inc., Richmond, VA, United States (U.S. corporation)

NUMBER	KIND	DATE
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PATENT INFORMATION: US 5241003 19930831 <--  
 APPLICATION INFO.: US 1992-895001 19920608 (7)  
 RELATED APPLN. INFO.: Division of Ser. No. US 1991-801488, filed on 2 Dec 1991, now patented, Pat. No. US 5137980 which is a continuation-in-part of Ser. No. US 1990-524422, filed on 17 May 1990, now patented, Pat. No. US 5071919 And a continuation-in-part of Ser. No. US 1991-762453, filed on 19 Sep 1991, now patented, Pat. No. US 5137978  
 DOCUMENT TYPE: Utility  
 FILE SEGMENT: Granted  
 PRIMARY EXAMINER: Lipman, Bernard  
 LEGAL REPRESENTATIVE: Sieberth, John F.  
 NUMBER OF CLAIMS: 19  
 EXEMPLARY CLAIM: 1  
 LINE COUNT: 3437

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB Succinimides, succinic esters, and succinic ester-amides are formed by (A) reacting (i) at least one substantially aliphatic polymer of at least one lower olefin, and (ii) an acidic reactant or a mixture of two or more acidic reactants represented by the general formula



wherein R and R' are independently --OH, --O-lower alkyl, a halogen atom, or taken together are a single oxygen atom; the process being characterized in that:

a) the substantially aliphatic polymer is comprised predominantly or entirely of polyisobutene, at least 50% of the polyisobutene content of such polymer having an end group represented by the formula ##STR1## b) the mole ratio of said acidic reactant(s):said polymer(s) is at least 1:1;

c) the reaction mixture is maintained under superatmospheric pressure during at least a substantial portion of the reaction period; and

d) said acylating agent is characterized by having an average total tar rating as determined by the method described in the specification hereof that is at least 25% lower than the average total tar rating of a corresponding product made in the same way under the same reaction conditions using a polyisobutene containing up to 10% of the above-depicted end group; and

(B) reacting such acylating agent with at least one alcohol (preferably a polyhydric alcohol) or amine (preferably a polyamine having at least one primary amino group).

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L39 ANSWER 9 OF 20 USPATFULL on STN

ACCESSION NUMBER: 93:6984 USPATFULL  
 TITLE: Thermoplastic resin composition  
 INVENTOR(S): Furuta, Motonobu, Tsukuba, Japan  
 Tsuji, Mitsuji, Ichihara, Japan  
 PATENT ASSIGNEE(S): Sumitomo Chemical Company, Limited, Osaka, Japan  
 (non-U.S. corporation)

NUMBER	KIND	DATE
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PATENT INFORMATION: US 5182151 19930126 <--  
APPLICATION INFO.: US 1990-545827 19900629 (7)

	NUMBER	DATE	
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PRIORITY INFORMATION:	JP 1989-177717	19890710	<--
DOCUMENT TYPE:	Utility		
FILE SEGMENT:	Granted		
PRIMARY EXAMINER:	Seccuro, Jr., Carman J.		
ASSISTANT EXAMINER:	Hamilton, III, Thomas		
LEGAL REPRESENTATIVE:	Birch, Stewart, Kolasch & Birch		
NUMBER OF CLAIMS:	13		
EXEMPLARY CLAIM:	1		
LINE COUNT:	1739		
CAS INDEXING IS AVAILABLE FOR THIS PATENT.			
AB	A thermoplastic resin composition is disclosed which comprises		

(a) a modified polyphenylene ether or a composition containing it, and

(b) (i) a modified propylene polymer comprising propylene polymer which is graft-copolymerized with a styrene based monomer or with a mixture of a styrene based monomer and a monomer copolymerizable therewith, or (ii) a composition containing the modified propylene polymer in (b)-(i) and propylene polymer. The resin composition may contain (c) a rubber-like substance containing at least one rubber-like substance having a polar group and/or (d) a melt flow characteristics improving agent.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L39 ANSWER 10 OF 20 USPATFULL on STN  
ACCESSION NUMBER: 92:66056 USPATFULL  
TITLE: Ashless dispersants formed from substituted acylating agents and their production and use  
INVENTOR(S): DeGonia, David J., Granite City, IL, United States  
Griffin, Paul G., Collinsville, IL, United States  
PATENT ASSIGNEE(S): Ethyl Petroleum Additives, Inc., St. Louis, MO, United States (U.S. corporation)

	NUMBER	KIND	DATE	
	-----	-----	-----	
PATENT INFORMATION:	US 5137980		19920811	<--
APPLICATION INFO.:	US 1991-801488		19911202 (7)	
DISCLAIMER DATE:	20081210			
RELATED APPLN. INFO.:	Continuation-in-part of Ser. No. US 1990-524422, filed on 17 May 1990, now patented, Pat. No. US 5071919 And a continuation-in-part of Ser. No. US 1991-762453, filed on 19 Sep 1991			
DOCUMENT TYPE:	Utility			
FILE SEGMENT:	Granted			
PRIMARY EXAMINER:	Lipman, Bernard			
LEGAL REPRESENTATIVE:	Sieberth, John F.			
NUMBER OF CLAIMS:	34			
EXEMPLARY CLAIM:	1			
LINE COUNT:	3496			
CAS INDEXING IS AVAILABLE FOR THIS PATENT.				
AB	Succinimides, succinic esters, and succinic ester-amides are formed by			

(A) reacting (i) at least one substantially aliphatic polymer of at least one lower olefin, and (ii) an acidic reactant or a mixture of two or more acidic reactants represented by the general formula

R--CO--CH.dbd.CH--CO--R'

wherein R and R' are independently --OH, --O-lower alkyl, a halogen atom, or taken together are a single oxygen atom; the process being characterized in that:

a) the substantially aliphatic polymer is comprised predominantly or entirely of polyisobutene, at least 50% of the polyisobutene content of such polymer having an end group represented by the formula ##STR1## b) the mole ratio of said acidic reactant(s): said polymer(s) is at least 1:1;

c) the reaction mixture is maintained under superatmospheric pressure during at least a substantial portion of the reaction period; and

d) said acylating agent is characterized by having an average total tar rating as determined by the method described in the specification hereof that is at least 25% lower than the average total tar rating of a corresponding product made in the same way under the same reaction conditions using a polyisobutene containing up to 10% of the above-depicted end group; and

(B) reacting such acylating agent with at least one alcohol (preferably a polyhydric alcohol) or amine (preferably a polyamine having at least one primary amino group).

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L39 ANSWER 11 OF 20 USPATFULL on STN

ACCESSION NUMBER: 86:66189 USPATFULL

TITLE: Aluminum wettable cathode material for use in aluminum reduction cell

INVENTOR(S): Boxall, Larry G., Baltimore, MD, United States  
 Buchta, William M., Baltimore, MD, United States  
 Cooke, Arthur V., Baltimore, MD, United States  
 Nagle, Dennis C., Catonsville, MD, United States  
 Townsend, Douglas W., Glen Burnie, MD, United States  
 PATENT ASSIGNEE(S): Commonwealth Aluminum Corporation, Bethesda, MD, United States (U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 4624766		19861125
APPLICATION INFO.:	US 1985-752442		19850703 (6)
DISCLAIMER DATE:	20010821		
RELATED APPLN. INFO.:	Division of Ser. No. US 1982-400762, filed on 22 Jul 1982, now patented, Pat. No. US 4544469		
DOCUMENT TYPE:	Utility		
FILE SEGMENT:	Granted		
PRIMARY EXAMINER:	Valentine, Donald R.		
LEGAL REPRESENTATIVE:	Kenyon & Kenyon		
NUMBER OF CLAIMS:	27		
EXEMPLARY CLAIM:	1		
LINE COUNT:	2154		

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB Aluminum cells may be produced having cathode surfaces which are wetted by aluminum, said surfaces comprising Refractory Hard Materials in a non-graphitized carbon matrix. Such cells may utilize inclined or drained cathodes as well as non-consumable anodes.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L39 ANSWER 12 OF 20 USPATFULL on STN

ACCESSION NUMBER: 85:57879 USPATFULL  
 TITLE: Aluminum cell having aluminum wettable cathode surface  
 INVENTOR(S): Boxall, Larry G., Baltimore, MD, United States  
 Buchta, William M., Baltimore, MD, United States  
 Cooke, Arthur V., Baltimore, MD, United States  
 Nagle, Dennis C., Catonsville, MD, United States  
 Townsend, Douglas W., Glen Burnie, MD, United States  
 PATENT ASSIGNEE(S): Commonwealth Aluminum Corporation, Bethesda, MD, United States (U.S. corporation)

	NUMBER	KIND	DATE	
PATENT INFORMATION:	US 4544469		19851001	<--
APPLICATION INFO.:	US 1982-400762		19820722	(6)
DOCUMENT TYPE:	Utility			
FILE SEGMENT:	Granted			
PRIMARY EXAMINER:	Valentine, Donald R.			
LEGAL REPRESENTATIVE:	Mylius, Herbert W.			
NUMBER OF CLAIMS:	18			
EXEMPLARY CLAIM:	1			
LINE COUNT:	2188			

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB Aluminum cells may be produced having cathode surfaces which are wetted by aluminum, said surfaces comprising Refractory Hard Materials in a non-graphitized carbon matrix. Such cells may utilize inclined or drained cathodes as well as non-consumable anodes.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L39 ANSWER 13 OF 20 USPATFULL on STN

ACCESSION NUMBER: 85:38876 USPATFULL  
 TITLE: Aluminum cell cathode coating composition  
 INVENTOR(S): Boxall, Larry G., Baltimore, MD, United States  
 Buchta, William M., Baltimore, MD, United States  
 Cooke, Arthur V., Baltimore, MD, United States  
 Nagle, Dennis C., Catonsville, MD, United States  
 Townsend, Douglas W., Glen Burnie, MD, United States  
 PATENT ASSIGNEE(S): Martin Marietta Aluminum Inc., Bethesda, MD, United States (U.S. corporation)

	NUMBER	KIND	DATE	
PATENT INFORMATION:	US 4526911		19850702	<--
APPLICATION INFO.:	US 1982-400772		19820722	(6)
DOCUMENT TYPE:	Utility			
FILE SEGMENT:	Granted			
PRIMARY EXAMINER:	Jacobs, Lewis T.			
LEGAL REPRESENTATIVE:	Mylius, Herbert W.			
NUMBER OF CLAIMS:	31			
EXEMPLARY CLAIM:	5			
LINE COUNT:	2152			

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB This invention relates to an improved coating composition for application to aluminum cell cathodes, wherein said composition comprises a Refractory Hard Material, and a thermosetting resinous binder system.

The resinous binder system is characterized by a char yield greater than 25 percent, while the coating composition exhibits expansion characteristics such as to adhere to a cathode block at temperatures up to and including those normally encountered in the operation of an aluminum cell. The ablation rate of the carbon system utilized is essentially equal to the combined wear and dissolution rate of the Refractory Hard Material in an aluminum cell environment.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L39 ANSWER 14 OF 20 USPATFULL on STN  
 ACCESSION NUMBER: 84:46916 USPATFULL  
 TITLE: Aluminum cell cathode coating method  
 INVENTOR(S): Boxall, Larry G., Baltimore, MD, United States  
 Buchta, William M., Baltimore, MD, United States  
 Cooke, Arthur V., Baltimore, MD, United States  
 Nagle, Dennis C., Catonsville, MD, United States  
 Townsend, Douglas W., Glen Burnie, MD, United States  
 PATENT ASSIGNEE(S): Martin Marietta Corporation, Bethesda, MD, United States (U.S. corporation)

	NUMBER	KIND	DATE	
PATENT INFORMATION:	US 4466996		19840821	<--
APPLICATION INFO.:	US 1982-400773		19820722	(6)
DOCUMENT TYPE:	Utility			
FILE SEGMENT:	Granted			
PRIMARY EXAMINER:	Morgenstern, Norman			
ASSISTANT EXAMINER:	Jaconetty, K. E.			
LEGAL REPRESENTATIVE:	Chin, Gay, Mylius, Herbert W.			
NUMBER OF CLAIMS:	23			
EXEMPLARY CLAIM:	1			
LINE COUNT:	2091			

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB This invention relates to a method for the application of a coating composition containing Refractory Hard Material to a cathode substrate to prepare an aluminum wettable cathode surface.

A mixture of Refractory Hard Material and carbon system is applied to a cathode substrate, cured and carbonized to a non-graphitized carbon matrix containing Refractory Hard Material, characterized by strong bonding of said matrix to said substrate and an ablation rate of said carbon matrix similar to the combined rate of wear and dissolution of the Refractory Hard Material.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L39 ANSWER 15 OF 20 USPATFULL on STN  
 ACCESSION NUMBER: 84:46915 USPATFULL  
 TITLE: Control of ledge formation in aluminum cell operation  
 INVENTOR(S): Boxall, Larry G., Baltimore, MD, United States  
 Townsend, Douglas W., Glen Burnie, MD, United States  
 PATENT ASSIGNEE(S): Martin Marietta Corporation, Bethesda, MD, United States (U.S. corporation)

	NUMBER	KIND	DATE	
PATENT INFORMATION:	US 4466995		19840821	<--
APPLICATION INFO.:	US 1982-400763		19820722	(6)

DOCUMENT TYPE: Utility  
FILE SEGMENT: Granted  
PRIMARY EXAMINER: Lusignan, Michael R.  
ASSISTANT EXAMINER: Bueker, Richard  
LEGAL REPRESENTATIVE: Chin, Gay, Mylius, Herbert W.  
NUMBER OF CLAIMS: 10  
EXEMPLARY CLAIM: 1  
NUMBER OF DRAWINGS: 1 Drawing Figure(s); 1 Drawing Page(s)  
LINE COUNT: 2301

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The application of a Refractory Hard Material coating composition to selected areas of the surface of an aluminum cell cathode permits tailoring or control of ledge formation during cell operation. Cell voltage improvements are also noted, resulting in more efficient cell performance.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L39 ANSWER 16 OF 20 USPATFULL on STN  
ACCESSION NUMBER: 83:19378 USPATFULL  
TITLE: Process and compositions  
INVENTOR(S): Karll, Robert E., Batavia, IL, United States  
Lee, Richard J., Downers Grove, IL, United States  
PATENT ASSIGNEE(S): Standard Oil Company (Indiana), Chicago, IL, United States (U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 4384138		19830517 <--
APPLICATION INFO.:	US 1978-945316		19780925 (5)
RELATED APPLN. INFO.:	Continuation-in-part of Ser. No. US 1977-831732, filed on 9 Sep 1977, now patented, Pat. No. US 4142980		
DOCUMENT TYPE:	Utility		
FILE SEGMENT:	Granted		
PRIMARY EXAMINER:	Siegel, Alan		
LEGAL REPRESENTATIVE:	Kretchmer, Richard A., McClain, William T., Magidson, William H.		
NUMBER OF CLAIMS:	2		
EXEMPLARY CLAIM:	1		
LINE COUNT:	368		

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB Disclosed are substituted phenol comprising the reaction product of an alkyl phenol, said alkyl substituent containing about 50 to about 20,000 carbon atoms, and aliphatic unsaturated carboxylic acid containing about 3 to about 100 carbon atoms; and a process for the manufacture of said substituted phenol. The substituted phenol can have the formula ##STR1## where R comprises alkyl substituent containing from about 50 to about 20,000 carbon atoms, and n and r are integers such that  $n+r \geq 5 \leq 15$ .

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L39 ANSWER 17 OF 20 USPATFULL on STN  
ACCESSION NUMBER: 79:11726 USPATFULL  
TITLE: Mannich reaction products made with alkyphenol substituted aliphatic unsaturated carboxylic acids  
INVENTOR(S): Karll, Robert E., Batavia, IL, United States  
Lee, Richard J., Downers Grove, IL, United States  
PATENT ASSIGNEE(S): Standard Oil Company (Indiana), Chicago, IL, United States (U.S. corporation)



	NUMBER	KIND	DATE	
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PATENT INFORMATION:	US 4142980		19790306	<--
APPLICATION INFO.:	US 1977-831732		19770909	(5)
DOCUMENT TYPE:	Utility			
FILE SEGMENT:	Granted			
PRIMARY EXAMINER:	Gantz, Delbert E.			
ASSISTANT EXAMINER:	Vaughn, Irving			
LEGAL REPRESENTATIVE:	Sroka, Frank J., Gilkes, Arthur G., McClain, William T.			
NUMBER OF CLAIMS:	28			
EXEMPLARY CLAIM:	1,23			
LINE COUNT:	475			

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB Disclosed are processes for making certain compositions, the compositions and lubricating oils containing certain compositions. Disclosed are a substituted phenol comprising the reaction product of an alkyl phenol, said alkyl substituent containing about 50 to about 20,000 carbon atoms, and an aliphatic unsaturated carboxylic acid containing about 3 to about 100 carbon atoms; and a process for the manufacture of said substituted phenol. Also disclosed are oil soluble Mannich reaction products of said substituted phenol, an amine having at least one reactive nitrogen, and a formaldehyde affording reactant; and a process for the manufacture of said Mannich product. Also disclosed is a lubricating oil composition containing said Mannich reaction product.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L39 ANSWER 18 OF 20 USPATFULL on STN  
 ACCESSION NUMBER: 76:67948 USPATFULL  
 TITLE: Process of coating calcium sulfate dihydrate detergent filler particles  
 INVENTOR(S): Lamberti, Vincent, Upper Saddle River, NJ, United States  
 PATENT ASSIGNEE(S): Lever Brothers Company, New York, NY, United States (U.S. corporation)

	NUMBER	KIND	DATE	
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PATENT INFORMATION:	US 3997692		19761214	<--
APPLICATION INFO.:	US 1975-624157		19751020	(5)
RELATED APPLN. INFO.:	Division of Ser. No. US 1974-506160, filed on 16 Sep 1974, now patented, Pat. No. US 3954649			
DOCUMENT TYPE:	Utility			
FILE SEGMENT:	Granted			
PRIMARY EXAMINER:	Albrecht, Dennis L.			
LEGAL REPRESENTATIVE:	Dusyn, Kenneth F., Farrell, James J., Kurtz, Melvin H.			
NUMBER OF CLAIMS:	6			
EXEMPLARY CLAIM:	1			
LINE COUNT:	785			

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB Sodium sulfate, the compound commonly used as a filler in detergent compositions, is in short supply, and a suitable substitute for use in detergent compositions is calcium sulfate dihydrate coated with a substantially water-insoluble calcium salt selected from the group consisting of calcium carbonate, calcium silicate, calcium sulfite, calcium orthophosphate, hydroxyapatite and a calcium salt of an alkanolic acid having about 12 to about 22 carbon atoms.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L39 ANSWER 19 OF 20 USPATFULL on STN  
ACCESSION NUMBER: 76:24500 USPATFULL  
TITLE: Detergent compositions containing coated particulate  
calcium sulfate dihydrate  
INVENTOR(S): Lamberti, Vincent, Upper Saddle River, NJ, United  
States  
PATENT ASSIGNEE(S): Lever Brothers Company, New York, NY, United States  
(U.S. corporation)

	NUMBER	KIND	DATE	
PATENT INFORMATION:	US 3954649		19760504	<--
APPLICATION INFO.:	US 1974-506160		19740916	(5)
DOCUMENT TYPE:	Utility			
FILE SEGMENT:	Granted			
PRIMARY EXAMINER:	Albrecht, Dennis L.			
LEGAL REPRESENTATIVE:	Dusyn, Kenneth F., Farrell, James J., Kurtz, Melvin H.			
NUMBER OF CLAIMS:	12			
EXEMPLARY CLAIM:	1,10			
LINE COUNT:	818			

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB Sodium sulfate, the compound commonly used as a filler in detergent compositions, is in short supply, and a suitable substitute for use in detergent compositions is calcium sulfate dihydrate coated with a substantially water-insoluble calcium salt selected from the group consisting of calcium carbonate, calcium silicate, calcium sulfite, calcium orthophosphate, hydroxyapatite and a calcium salt of an alkanolic acid having about 12 to about 22 carbon atoms.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L39 ANSWER 20 OF 20 USPATFULL on STN  
ACCESSION NUMBER: 75:993 USPATFULL  
TITLE: STABILIZED VINYL HALIDE POLYMER COMPOSITIONS  
INVENTOR(S): Blewett, Charles W., Ft. Mitchell, KY, United States  
Rhodes, Philip H., Cincinnati, OH, United States  
PATENT ASSIGNEE(S): Emery Industries, Inc., Cincinnati, OH, United States  
(U.S. corporation)

	NUMBER	KIND	DATE	
PATENT INFORMATION:	US 3859236		19750107	<--
APPLICATION INFO.:	US 1973-352599		19730419	(5)
DOCUMENT TYPE:	Utility			
FILE SEGMENT:	Granted			
PRIMARY EXAMINER:	Marquis, Melvyn I.			
ASSISTANT EXAMINER:	Parker, William E.			
LEGAL REPRESENTATIVE:	Rice, John D., Baracka, G. A.			
NUMBER OF CLAIMS:	8			
EXEMPLARY CLAIM:	1			
LINE COUNT:	472			

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB Vinyl halide resin compositions are stabilized with bivalent metal glyceroxides. Vinylchloride homopolymers and copolymers stabilized with zinc glyceroxide are a particularly important aspect of the present invention. The use of metal glyceroxides makes it possible to increase the metal content in the polymer while employing a small amount of the metal stabilizer compound.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

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L11 ANSWER 1 OF 3 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2004:332324 HCAPLUS

DOCUMENT NUMBER: 141:88730

TITLE: Layered silicates and mesostructured aluminosilicate promoters of benzyltoluenes

AUTHOR(S): Francisco, Bernardo; Arroyo, Gabriel A.; Noguez, Olivia; Aceves, Juan M.; Dominguez, Jose M.; Delgado, Francisco; Miranda, Rene

CORPORATE SOURCE: Facultad de Estudios Superiores Cuautitlan, Universidad Nacional Autonoma de Mexico, C. P. 54740, Mex.

SOURCE: Revista de la Sociedad Quimica de Mexico (2003), 47(4), 295-297

CODEN: RSQMAN; ISSN: 0583-7693

PUBLISHER: Sociedad Quimica de Mexico

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 141:88730

AB Several hydrous layered silicates, modified kanemites, aluminosilicates and various mesoporous materials, were **hydrothermally** synthesized, and then evaluated as new catalysts for obtaining benzyltoluenes. In addition, the dependence of the catalyst concentration, the influence of the reaction time and the effect of the temperature were studied.

CC 22-4 (Physical Organic Chemistry)  
Section cross-reference(s): 51, 67

ST benzyltoluene synthesis layered silicate modified kanemite aluminosilicate mesoporous material

IT Friedel-Crafts reaction catalysts  
(Layered silicates and mesostructured aluminosilicate Lewis acid catalysts for Friedel-Crafts alkylation of toluene with benzyl chloride for preparation of o- and p-benzyltoluene)

IT Lewis acids  
RL: CAT (Catalyst use); USES (Uses)  
(Layered silicates and mesostructured aluminosilicate Lewis acid catalysts for Friedel-Crafts alkylation of toluene with benzyl chloride for preparation of o- and p-benzyltoluene)

IT MCM zeolites  
RL: CAT (Catalyst use); USES (Uses)  
(MCM-44, MCM-17, MCM-7; Layered silicates and mesostructured aluminosilicate Lewis acid catalysts for Friedel-Crafts alkylation of toluene with benzyl chloride for preparation of o- and p-benzyltoluene)

IT Porous materials  
(mesoporous; Layered silicates and mesostructured aluminosilicate Lewis acid catalysts for Friedel-Crafts alkylation of toluene with benzyl chloride for preparation of o- and p-benzyltoluene)

IT 38785-33-0D, Kanemite, ion-exchanged  
RL: CAT (Catalyst use); USES (Uses)  
(Layered silicates and mesostructured aluminosilicate Lewis acid catalysts for Friedel-Crafts alkylation of toluene with benzyl chloride for preparation of o- and p-benzyltoluene)

IT 620-83-7P, p-Benzyltoluene 713-36-0P, o-Benzyltoluene  
RL: IMF (Industrial manufacture); PREP (Preparation)  
(Layered silicates and mesostructured aluminosilicate Lewis acid catalysts for Friedel-Crafts alkylation of toluene with benzyl chloride for preparation of o- and p-benzyltoluene)

IT 100-44-7, Benzyl chloride, reactions 108-88-3, Toluene, reactions  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(Layered silicates and mesostructured aluminosilicate Lewis acid

catalysts for Friedel-Crafts alkylation of toluene with benzyl chloride for preparation of o- and p-benzyltoluene)

REFERENCE COUNT: 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L11 ANSWER 2 OF 3 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2004:80555 HCAPLUS

DOCUMENT NUMBER: 140:130123

TITLE: Recovery of phenolic compounds from a residual plant material by using a **hydrothermal** process

INVENTOR(S): Ballesteros Perdices, Mercedes; Negro Alvarez, Maria Jose; Manzanares Secades, Paloma; **Ballesteros Perdices, Ignacio**; Oliva Dominguez, Jose Miguel

PATENT ASSIGNEE(S): Centro De Investigaciones Energeticas, Medioambientales Y Tecnologicas (C.I.E.M.A.T.), Spain

SOURCE: PCT Int. Appl., 18 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: Spanish

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004009206	A1	20040129	WO 2003-ES85	20030220
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW			
RW:	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			
ES 2199069	A1	20040201	ES 2002-1671	20020717
ES 2199069	B1	20050201		
AU 2003208731	A1	20040209	AU 2003-208731	20030220
US 2004176647	A1	20040909	US 2004-801511	20040316
PRIORITY APPLN. INFO.:			ES 2002-1671	A 20020717
			WO 2003-ES85	W 20030220

AB The method involves a **hydrothermal** processing of a residual plant material (especially waste from olive oil production) in a closed reactor (especially stirred autoclave). The process contains the following steps: (a) contacting of the raw material with hot water at a solid/liquid weight ratio of 1:(5-15) in the reactor, (b) stirring of the mixture, (c) heating to a

temperature

range of 180-240° and at such a pressure that the water remains in the liquid phase, (d) stirring for 4-30 min, and (e) cooling of the reactor to .apprx.40°, unloading of the mixture and recovery of the liquid fraction. Content of tyrosol and hydroxytyrosol is determined by using high-pressure liquid chromatog. The recovered phenolic compds. are suitable as antioxidants for food and pharmaceutical industries.

IC ICM B01D012-00

ICS C07C039-08; C07C039-11; C07C039-10

CC 45-4 (Industrial Organic Chemicals, Leather, Fats, and Waxes) Section cross-reference(s): 17, 63

ST phenolic compd recovery residual plant material **hydrothermal** process; olive oil manufg waste phenolic compd recovery

IT Autoclaves

(for recovery of phenolic compds. from olive oil manufacturing waste by using **hydrothermal** process)

IT Thermal decomposition  
(hydrolytic; recovery of phenolic compds. from olive oil manufacturing waste by using **hydrothermal** process)

IT Hydrolysis  
(pyrolytic; recovery of phenolic compds. from olive oil manufacturing waste by using **hydrothermal** process)

IT Olive oil  
RL: IMF (Industrial manufacture); PEP (Physical, engineering or chemical process); PYP (Physical process); PREP (Preparation); PROC (Process)  
(recovery of phenolic compds. from olive oil manufacturing waste by using **hydrothermal** process)

IT Phenols, preparation  
RL: PUR (Purification or recovery); PREP (Preparation)  
(recovery of phenolic compds. from olive oil manufacturing waste by using **hydrothermal** process)

IT Antioxidants  
(recovery of phenolic compds. from olive oil manufacturing waste by using **hydrothermal** process for)

IT 501-94-0P, Tyrosol 10597-60-1P, Hydroxytyrosol  
RL: PUR (Purification or recovery); PREP (Preparation)  
(recovery of phenolic compds. from olive oil manufacturing waste by using **hydrothermal** process)

REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

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ACCESSION NUMBER: 2003:355077 HCAPLUS

DOCUMENT NUMBER: 139:9155

TITLE: **Hydrothermal** pretreatment conditions to enhance ethanol production from poplar biomass

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CORPORATE SOURCE: DER-CIEMAT, Madrid, 28040, Spain

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AB Pretreatment has been recognized as a key step in enzyme-based conversion processes of lignocellulose biomass to ethanol. The aim of this study is to evaluate two **hydrothermal** pretreatments (steam explosion and liquid hot water) to enhance ethanol production from poplar (*Populus nigra*) biomass by a simultaneous saccharification and fermentation (SSF) process. The composition of liquid and solid fractions obtained after pretreatment, enzymic digestibility, and ethanol production of poplar biomass pretreated at different exptl. conditions was analyzed. The best results were obtained in steam explosion pretreatment at 210°C and 4 min, taking into account cellulose recovery above 95%, enzymic hydrolysis yield of about 60%, SSF yield of 60% of theor., and 41% xylose recovery in the liquid fraction. Large particles can be used for poplar biomass in both pretreatments, since no significant effect of particle size on enzymic hydrolysis and SSF was obtained.

CC 52-1 (Electrochemical, Radiational, and Thermal Energy Technology)

ST ethanol poplar steam explosion

IT Hydrolysis

(enzymic; **hydrothermal** pretreatment conditions to enhance ethanol production from poplar biomass)

IT Steam  
(explosion; **hydrothermal** pretreatment conditions to enhance ethanol production from poplar biomass)

IT Populus  
(**hydrothermal** pretreatment conditions to enhance ethanol production from poplar biomass)

IT 9004-34-6, Cellulose, processes 11132-73-3, Lignocellulose  
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PROC (Process)  
(**hydrothermal** pretreatment conditions to enhance ethanol production from poplar biomass)

IT 64-17-5P, Ethanol, preparation  
RL: IMF (Industrial manufacture); PREP (Preparation)  
(**hydrothermal** pretreatment conditions to enhance ethanol production from poplar biomass)

REFERENCE COUNT: 23 THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT